

MOTOR TREND

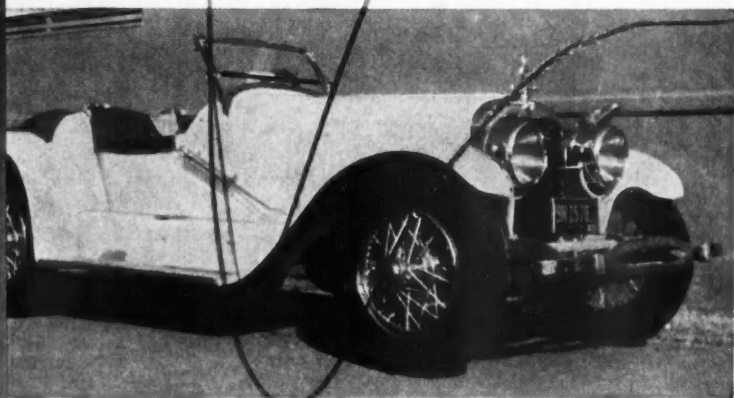
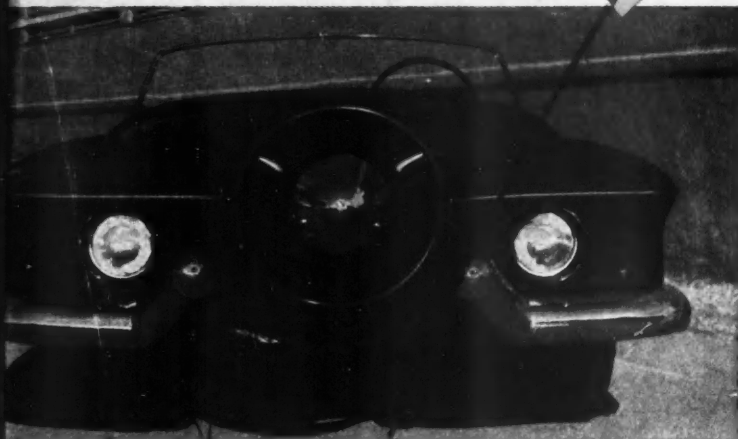
The Car Owners Magazine

TECHNOLOGY DEPT.

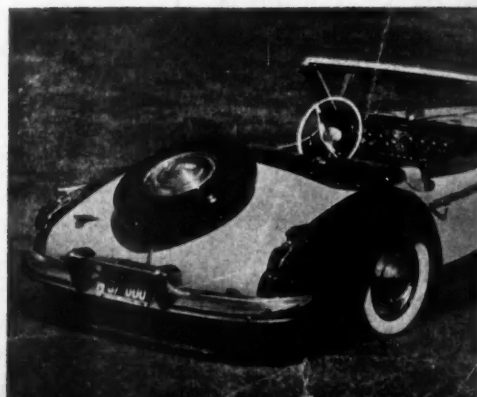
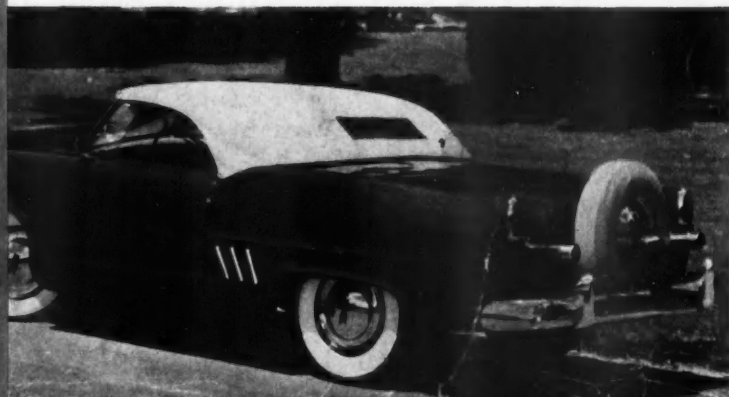
HAUNTED CARS THE TRUTH ABOUT POWER STEERING

3 ROAD TESTS
BUICK V-8 — WILLYS

CHEVROLET
JULY 1958

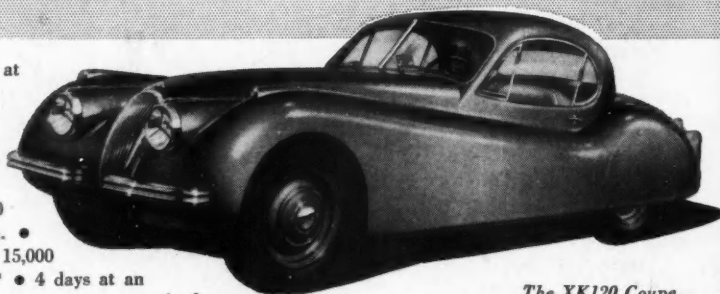


- ▶ MOBILGAS ECONOMY RUN
- ▶ "MANTA RAY" CUSTOM
- ▶ 1920 MERCER RACEABOUT
- ▶ CUSTOMIZED HENRY J
- ▶ MEXICAN SPORT CUSTOM



THE FIRST CAR EVER TO EXCEED 100 M.P.H FOR 7 DAYS AND NIGHTS

Covering a total of 16,852 miles at 100.31 m.p.h. at Montlhery, the Jaguar XK120 coupe, driven by Mr. Leslie Johnson, Mr. Stirling Moss, Mr. J. E. G. Fairman and Mr. H. L. Hadley, broke 4 World Records and 5 International Class 'C' Records. During 7 days and nights the following records were established • 10,000 kilometres at an average speed of 107.31 m.p.h. • 3 days at an average speed of 105.55 m.p.h.* • 15,000 kilometres at an average speed of 101.95 m.p.h.* • 4 days at an average speed of 101.17 m.p.h.* • 10,000 miles at an average speed of 100.66 m.p.h.* • (*World Records.)



The XK120 Coupe

THE FIRST CAR EVER TO WIN AN ALPINE GOLD CUP



The XK120 Open Sports

In his Jaguar XK120 which has now exceeded a mileage of 45,000, Mr. Ian Appleyard became the first man to gain the Golden Coup des Alpes, an award of the highest merit for completing 3 successive Annual Alpine Trials *without the loss of a single mark*. In this same car Mr. Appleyard has gained over 40 awards in major National and International competitions.

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Eastern States: The Hoffman Motor Car Co., Inc., 487 Park Avenue,
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JAGUAR

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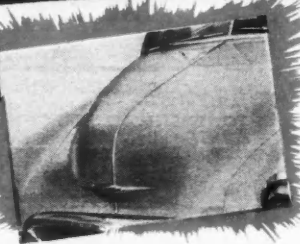
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1949-52 CHEVY Bull Nose Molding

New and terrific. Adds maximum of class with minimum of expense and effort. One-piece molding installs in place of original unit without welding, cutting, drilling or painting. Extends from windshield to grille. Top quality stainless steel polished to chrome-like luster. May be painted if dechroming.

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1951 FORD Bull Nose Molding

Really sharp. Nose off hood but save expense of welding, leading and repainting. Replaces both hood ornament plus center hood molding. No drilling, no cutting. Snaps into place, 3 min. installation. Stainless steel polished to chrome-like luster. **ONLY \$3.95**

Also 1949-1950 Ford Bull Nose

Replaces stock hood ornament, no drilling, cutting or welding. Chrome plated. **\$2.95**

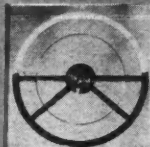


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By popular demand! Eliminates costly leading, in customizing your Plymouth. Replaces stock hood ornament and blends perfectly into hood

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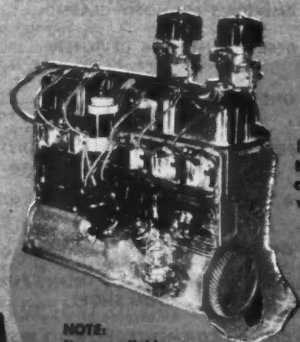
1949-52 Ford, \$19.95; 1932-40 Ford and Mercury, \$21.95.

CHEVY CHROME MOTOR KIT

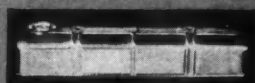
Buy 'em all and save \$3.25

Includes chrome wire loom, red ignition wire, brass terminals, chrome valve cover and chrome side plate. A \$25.75 value, yours now for only

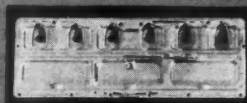
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NOTE: Items available individually plus \$2.25 for wire and 6dc for cap.



VALVE COVER—\$6.95 Finest quality chrome to withstand heat. Complete with chrome oil cap for late model conversion. Fits 1937-53.



SIDE PLATE—\$7.95 Real sharp. Chrome plated on steel. Fits 1937-53. Specify year and if Powerglide.

CHEVY WIRE LOOMS (1937-53) \$5.95 pair. With bright red ignition wire—\$7.95 complete.

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Electric conversions make push-button operation for doors and trunk. Easy to install and operate. Reliable, theft-proof. Throw away door handles, fill in holes, place push-button control where you want. Trunk kit fits Ford and Mercury 1937-53; all GM 1949-53 (except '49 Olds '1949'). Door kit fits all cars, all makes. Specify year and make.

TRUNK KIT—\$9.95; DOOR KIT—\$19.95

*25% deposit on all orders. Prices FOB Los Angeles. Postage COD. Add 3% Sales Tax in Calif.

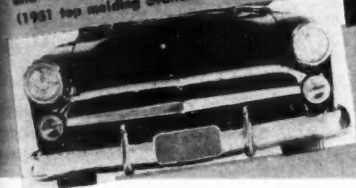
1949-50 MERCURY GRILLE CENTER

Streamline your "More" with a solid, massive-looking front. No welding or cutting. Just drill 2 holes for simple installation. Die stamped and chrome plated. It replaces center bar. Yours for **\$5.95**



1949-51 FORD GRILLE BAR

For that wide, big car look. Heavy gauge steel, extends inwards 2 1/2". Replaces complete center bar on '49 Ford—1951 top molding, filling hood. Requirements (not included): '49 Ford—1951 top molding, filling hood. 1951 top molding available at \$8.95.) **\$19.95**



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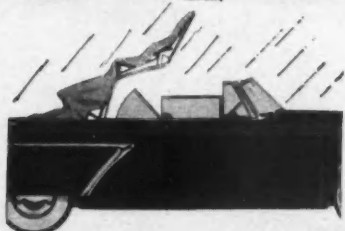
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JULY 1953

Published Monthly

VOL. 5 • NO. 7

**MOTOR
TREND**



THE CAR OWNERS MAGAZINE

FEATURES:

IS POWER STEERING HERE TO STAY?	Robert Scollay	21
Its future lies in proper geometry and weight distribution.		
CROSS-COUNTRY TEST OF THE '53 WILLYS	Walt Woron	24
"The only real way to test a car," one of our readers recently said, "is to drive it for long periods of time, preferably on a cross-country trip." We did just that.		
IS BUICK'S 50TH YEAR ITS BEST?		27
Many cars try to balance performance and economy with comfort. Just what is the potential of the '53 Buick Super V-8?		
HAUNTED CARS	Jim Earp	30
Fiendishly contrived devices—such as Mac Brainard's "Multiple Whammy Special"—can give your car an electronic watchdog.		
PERENNIAL FAVORITE		32
Long America's best girl, Chevrolet hopes to stay in that coveted spot with a curvaceous new body, a Powerglide transmission that takes off without beating its wings, and—at long last—full-pressure lubrication.		
RX FOR YOUR TOWN'S SICK ROADS	Robert Scollay	34
There aren't many short-cuts when it comes to revitalizing a road. A new process, described in this second article on "Your Traffic Problem," might be one of those short-cuts.		
IS IT WISE TO OWN A CONVERTIBLE?	Lorenzo "Dude" James	36
Open cars are pretty, they're smart, but do they make sense?		
AMERICA'S ECONOMY CLASSIC	Walt Woron and Bob Scollay	38
Economy is yours—if you want it.		
DESCENDANT OF A DEVILFISH	Jim Lodge	43
The name's the same, but the Manta Ray Custom replaces sting with style.		
ONE FOR THE MONEY	Bill Harkins	44
Built for a purpose—to win prizes—this customized Henry J does just that at Eastern motor shows.		
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The "Flying Horse" may carry Spain to new motoring world conquests.		
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This Mercer Raceabout was "the greatest" at the start of the Roaring Twenties.		
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A simple merger of the old and new results in a practical, possible '53 Lincoln Continental.		
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What to do about the parts that will keep it running. No. 3 in a series.		
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BRIEFS . . . by the editors

THIS ISSUE IS PACKED with many interesting features, one of which is a study in styling by capable artist Strother MacMinn, associated with Art Center School in Los Angeles. We are particularly anxious to get a reaction from our readers on his piece (page 80). What do you think of his thoughts and his approach to "Trends in Design"? Drop us a line, will you?

WITH ALL THE EMPHASIS on V-8 engines, you'd think they were way out in front of inline sixes in production. But, according to *Iron Age* magazine, V-8s have 37 per cent, inline sixes 50.3 per cent. Straight eights follow at 11.9 and fours trail at less than one.

IN THE 1953 MILLE MIGLIA, that famous automobile sports event in Italy, a Chrysler piloted by Paul Frere took first spot in stock category over two liters, averaging 69 mph for the run.

THERE'S BEEN A MOUNTING INTEREST in Lincoln Continentals by our readers, with many sending us their ideas of a new Continental. Industrial designer Newton S. Leichter gives us his conception (page 49). And, while we're on the subject, we have a report that the Lincoln Continental Owners Club, 245 State St., Boston 9, Mass., is an excellent organization for exchange of ideas and mutual assistance of LC owners.

LATEST DEVELOPMENTS in sale of Willys-Overland Motors, Inc., to Kaiser Manufacturing Corp. indicate the new company is named Willys Motors, Inc., and is to be headed by Edgar F. Kaiser, president and director. Many officers of the old Willys-Overland Motors will remain as officers in the new company. Automotive products of each company will continue to be marketed and serviced separately through the existing K-F and Willys distributor and dealer organizations. According to Kaiser announcement, it is intended to continue all of the facilities of each company in full operation in present locations.

CYCLE MAGAZINE, one of Trend's magazine family, has been purchased by Floyd Clymer Publishing Co. Effective with the July issue, the Clymer organization will do the publishing.

RECENTLY IT WAS ANNOUNCED that more than \$90,000,000 worth of gasoline was wasted in Los Angeles County last year because of traffic congestion and accidents, according to the Engineering Dept., Auto Club of Southern California. This is a startling fact that should start us to thinking how to eliminate this waste. Better roads could help, surely, so we offer you an article on a new process for reclaiming our nation's sick roads; see page 34.

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without the old as well as the new address.

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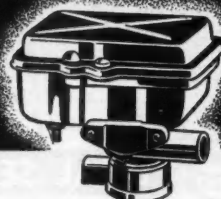
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your engine...*



**give it gas
FAST!**

STEWART-WARNER
Electric
fuel pump



**Starts to work the second
you turn on the ignition!**

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The Stewart-Warner Electric Fuel Pump operates entirely independently of the engine—goes to work the second you turn on the ignition, before you touch the starter button, assuring an even dependable flow of gas—as much as your engine needs. But the pump works only as needed, doesn't beat itself to death needlessly.

Choose either single or dual installation to fit your engine. Free flow capacity is 30 gallons or more per hour. Heavy-duty dual unit provides extra capacity, an extra pump in reserve for emergencies. Can be wired for individual operation.

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SAVE 50%. Pre-Fabricated Kit includes six 90° Bends, Collector Pipes, six Flanges, Gaskets & Easy Instructions for assembling your own headers! For ALL

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Kit includes Split Manifold Head Pipe, Dual Side Tailpipe, Mounting Brackets, & E-Z Instructions. Easily welds or bolts to present manifold. Uses Stock or Hollywood Mufflers. COMPLETE.....

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ALMQUIST ENGINEERING

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Letters

THOSE CAR RATINGS

Gentlemen:

I have been a subscriber to your magazine for three years and am not much taken with writing to the editor about every item with which I might or might not agree. Some of the criticism you received on your ratings of the 1952 cars was of the most destructive and unwarranted type. I say this not because I agree with the ratings (I am in 100 per cent agreement with your first choice, the second I violently oppose, and so on down the list), but because I recognize your ratings to be a sincere, unbiased attempt to rate all cars on a common ground.

Because the choice of so complex an article as an automobile is based on personal test, special requirements, and, unfortunately, financial consideration, and because Detroit's products are so varied in their ability to satisfy this multitude of different requirements, there is no such thing as rating a car, or any other product for that matter, as best, second best, etc., for everybody. "What's one man's meat is another man's poison" certainly applies to the choice of an automobile.

Your ratings are informative and interesting reading, but I feel that the service you provide is not the actual rating, but the vast fund of factual information from which a person may analyze the product in terms of his own needs and choice.

Undoubtedly there is no one car produced which would completely satisfy even one automotive enthusiast, and there is certainly no one person to whom every make of car would provide equal satisfaction. Therefore, the greatest owner satisfaction will come to the person who is able to make the choice which will most closely approximate his needs, and the information provided by MOTOR TREND certainly will assist a person in making the proper decision for himself.

I was very interested to note that my primary car was rated by MOTOR TREND as tops in the characteristic that caused me to switch to this make several years ago: the most miles per dollar. This car has many faults and features which I greatly dislike (I would rather drive at least half-a-dozen

other makes) but my prime requirement was overall cost, and after driving this make for 4½ years, I am convinced that it satisfies the cost limitation plus the other requirements of my particular driving conditions more fully than any other make, although I hope that someday in the not-far-distant future I may own another make.

More power to your trials, ratings, etc. I may often disagree with your opinions, but the information you provide is useful and the articles are interesting, as is the rest of your fine magazine. Keep up the good work.

Marshall B. Thornton
West Hartford, Conn.

DIG THAT CARTOONIST



Gentlemen:

Dig that craze cartoonist a deep hole and bury him!

Sgt. Stanley P. Bucklein
Ft. MacArthur, Calif.

WORLD CAR SURVEY

Gentlemen:

I'd like to see another "World Car Survey" like the one in MOTOR TREND for June 1951. The comparisons are very interesting and an up-to-date survey would fill the needs of many auto enthusiasts.

Ellis Horne
Oakland, Calif.

September's MT will bring an up-to-the-minute survey on cars from all over the world, complete with specifications.—Editor

MT SAVES READER \$130

Gentlemen:

I spent 25 cents for a copy of your magazine the other day and made \$130 on the deal. I refer to your article in the May issue on "The Car Finance Racket." I bought a car a few months ago from one of the big-

(Continued on page 8)

This Month's Cover

spans some 33 years of North American automotive history. Reading around from top right, Tom Medley shot the Economy Run photo (story on page 38); Felix Zelenka, the Manta Ray (page 43) and the Mercer (page 48); Bill Harkins the Henry J (page 44), and Don Pope, the Mexican Custom (page 54). All are Ektachromes.



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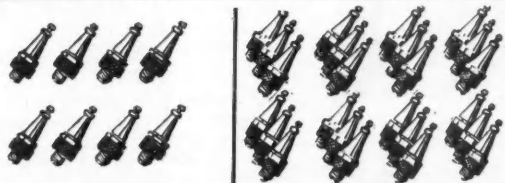
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On the left is a set of ordinary spark plugs. On the right, you see a set of Triple-Fires for the same car, showing for comparison, the triple service you get from each plug. Triple-Fires are priced with other first line plugs,—yet they out-perform and out-last other plugs 3 to 1, actually saving you up to \$13.20 per set. And here's why—



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UNCONDITIONALLY GUARANTEED FOR 20,000 MILES!

(covers defective material or workmanship)

ORDER BY MAIL TODAY! Triple-Fires are furnished in perfectly matched sets for 89¢ each (single plugs 98¢ each) Shipped postpaid or send \$1.00 per set deposit; balance C.O.D.

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5801 E. Beverly Blvd., Los Angeles 22, Calif.

Gentlemen:

Please ship _____ sets of Triple-Fire Spark Plugs for:

Yr. _____ Make _____ No. Cyl. _____

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

☐ Check Enclosed;
Ship Postpaid

☐ \$1.00 per set Deposit
Enclosed; Ship C.O.D.

BUSTLE

CONTINENTAL FALSIE

Your friends will never guess your bustle continental doesn't hold a tire. No folding or extending brackets to rattle. Same metal tire cover, hub cap, and license bracket light as our regular kit that really holds the tire. Installed in a flash.



\$34.95

1953 Chev.
" Pont.
" Olds.
" Buick
" Merc.
" Linc.
" Chrys.
" DeSoto

\$24.95

49-53 Ford
49-52 Chev.
49-51 Merc.
49-51 Linc.
49-52 Pont.
50-52 Dodge
50-52 DeSoto
50-52 Olds.

Chrome outer band \$10.00 extra. Other models available. Specify year and make of car. Prices on kits on request.

NEW BUSTLE MODELS		\$34.95
53 Kaiser	53 Hudson Jet	
50-53 Cadillac	53 Plymouth	
52-53 Willys	53 Dodge	
Saucer Disc (ripple) with knock-off (4)		\$29.50
Saucer Disc (ripple) (4)		19.50
(Saucer available in 13, 15, or 16 in.)		
Calvear Wire Wheel Disc		\$29.50

JET-FLOW BUMPERETTES for Ford and Chevrolet		
Fits '49-53 Ford		\$16.95
Fits '49-53 Chev.		\$16.95
State year and make of car		

FLARE-TYPE FENDER SKIRTS		
49-51 Ford	Deluxe	\$17.50
49-51 Merc.	Deluxe	18.50
52-53 Ford & Merc.	Narrow	12.50
	Wide	17.50
50-53 Buick (not flared)		14.95
53 Chrys., DeSoto, Dodge, Plymouth		17.50
49-53 Chev.		14.95
52-53 Willys		14.95

Skirts for all cars		
Rear lowering blocks, 3 in. \$4.50; 2 in.		\$ 3.50
Front lowering blocks 49-53 Ford & Merc.		8.95
Safety belts (per person)		14.95
Leather conditioner cream		1.00
Custom grille bar 49-52 Ford		20.95
Bull nose 49-50 Ford		2.95
Bull nose 51 Ford, 49-52 Chev.		3.95

We distribute Belond Equa-Flow Exhaust Systems

25% Deposit required on all orders. Price F.O.B. Glendale. Add 3% sales tax if you live in Calif.

Dealerships available—write on your letterhead

ACCESSORIES LTD.

DESIGNERS—MANUFACTURERS

1529-F Victory Blvd.

Glendale 1, Calif.

Phone Citrus 1-1511

Eight

(Continued from page 6)

gest dealers in the country, and the salesman told me the finance charge would be seven per cent, the same as the bank would charge. I read that article, looked up my contract, and found that it read 12 per cent. I wrote them a letter squawking to high heaven and the next day I received a credit slip for \$130, which made up the difference. More power to you! A few more articles like that will no doubt save a lot of chumps like me. I will never miss a single issue of MOTOR TREND after this.

M. L. Horn
Tulare, Calif.

FREE SPEEDOMETER

Gentlemen:

I have a speedometer for a Thomas Flyer. If anyone is interested, he can have it for the postage fee.

Joe Webster
2003 19th Ave.
Rockford, Ill.

TIRES AT HIGH SPEED

Gentlemen:

As usual, I have read the magazine from cover to cover. One thing that I have looked



for in vain in your magazine is a brief or picture article on high-speed tires and tubes.

Harold A. Amundson
Racine, Wis.

Search no more, Mr. Amundson. Try page 58.—Editor

A COP IS HEARD FROM

Gentlemen:

A note of gratitude for the article, "Why Do Cops Give Tickets?" Pick out a good-looking blonde to kiss Ernest Antrobus for me.

My buddies and I here in Birmingham have heard every gripe and excuse mentioned, plus a couple of thousand more. I sincerely wish that every driver in this country could read the story.

We have a saying here that about covers the taxpayers' opinion of a police officer, whether he is astride a "motor" or walking a beat: "You're one if you do, and you're one if you don't, so what the h—!"

Police Officer R. R. Powell
Traffic Division, Birmingham Police Dept.
Birmingham, Ala.

GET A HORSE

Gentlemen:

I do not care for your new road test titles, such as "Is the Studebaker Practical?" Here is a company that has been making vehicles for 100 years and you ask, are they practical? I am looking forward to your next offering, entitled "Will the Ford Ever Amount to Anything?" or "How Can Anyone Afford to Drive a Chrysler?" I am sure these articles will be cherished by many.

Donald C. Nelson
Granite Falls, Minn.

Motor Trend

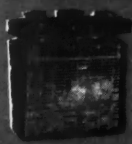
July 1954

SELF-CHARGING NEUTRONIC PLATE

LIFE-TIME

Battery Actually Lasts the LIFE OF YOUR CAR!

PHOTOS REVEAL WHAT
HAPPENS INSIDE BATTERY



Ordinary battery
after one year of service.



Ordinary battery
after 5 years of service.



ADD WATER ONCE A YEAR. AMAZING CAP RE-DISTILLS BATTERY WATER AS YOU DRIVE.
Water evaporating from battery re-condenses in chamber inside cap, drops back into battery actually re-distilled. Note in top of cap allows gas to escape. This helps cool the Lifetime battery. Lengthens battery life in large percentage of failures in ordinary batteries is due to over heating.

Why do batteries cost so much and wear out so soon? **EVERY YEAR**, about 47% of all car owners have to pay \$16-\$28 for a new battery. **Why? Can't Batteries be improved?**

HERE ARE THE FACTS: technically, there never has been any reason why a battery could not be built that would last 5 or 6 times as long as conventional batteries. In fact, such batteries have been built for years but have not been available to the American public because of foreign patent rights.

AT LAST—basic German patents plus American production know-how have been combined to produce this Lifetime Battery at the cost of an ordinary battery!

Charges and Re-Charges Automatically—Under exacting laboratory tests, batteries were deliberately discharged more than 400 times, and each time they automatically "bounced back" to life within minutes. Virtually impossible to run down! Test batteries are still in operation after 10 years . . . no one knows how many additional years they may last.

Secret Alloy Plates Defy Decomposition—Unlike ordinary zinc and lead battery plates which crumble, fall to the bottom of the case and eventually "short out," the amazing Neutronic plates developed for the Lifetime battery are a special alloy of high molecular stability.

High Amperage—Engineered for Sub-Arctic Use—With more than 15 amperes higher power than other car batteries, the Lifetime battery gives an added boost needed for quick starts in coldest climates. Can't freeze even at sub-zero temperatures. Far more power than needed for starter, electric top and windows, lights, radio, heater, horns, wipers, electric fuel pumps, transmission, etc.

Full 6-Year Guarantee Saves You Up to \$90—The average battery lasts 1.4 years at an average cost of \$19.55, or \$85.51 for a 6-year period. Why keep throwing this money away? The new Lifetime battery can easily be transferred to your new car when you trade in.

CORROSION-RESISTANT
TERMINALS INSURE
PERMANENT CLEAN CONTACT



DOUBLE-REINFORCED
CATALYTE CASE INSULATES
AGAINST CHARGE "LEAKAGE"

PERMANENT NEUTRONIC
PLATES RE-CHARGE
AUTOMATICALLY

FIBERGLASS INSULATION
PERMITS FREE CIRCULATION
OF ELECTROLYTE,
CAN'T DETERIORATE

ULTRA-THIN EVERLASTING
SEPARATORS ALLOW
BIGGER PLATES

ORDER BY MAIL

we pay shipping

If your dealer can't supply you with the Lifetime Battery, send us your name and address, plus make, model and year of car and we will ship battery at once.

ONLY

24.95
POSTPAID

(cash, check, money order), or enclose \$5.00 deposit, pay balance plus shipping charges C.O.D.

One price for all cars: only \$24.95 post-paid (\$28.95 for 12 volt).

FREE INSTALLATION!

We pay cost anywhere.

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Dept. MTB-7 10411 W. Washington Blvd., Culver City, Calif.

6-Year Guarantee

Backed by \$75,000 Insurance

No other battery produced today—or probably for many years to come—dares to make this guarantee. Every Lifetime Battery must pass rigid tests for peak power, endurance and automatic re-charging before it even leaves the factory. Guaranteed to give 100% satisfactory service for 6 years. (Special guarantees available for commercial, industrial and farm use).

Continental Mfg. Corp.
(Marketing Division of Consolidated Engineers)
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Please ship LIFETIME Battery at once:

☐ 6-volt (\$24.95) ☐ 12-volt (\$28.95)

for

(make model, year of car)

☐ I enclose cash, check, or money order; you pay shipping costs.

☐ I enclose \$5 deposit; will pay balance & shipping costs COD.

Name _____

Address _____

City _____

Zone _____

State _____

Spotlight on Detroit as we go to press

HARRY CUSHING - DETROIT EDITOR - REPORTS



Ford has revealed the "Syrtis," a true hardtop convertible. The three-eighths-scale model has an all-steel "Roof-O-Matic" top that lowers into the luggage compartment

DETROIT, MICHIGAN—The battle of the gas turbine engine is well under way in the Motor City! It is an extremely secretive skirmish at the present time, but at least two major companies are understood to be developing experimental units for early announcement.

Both General Motors and Ford are reputed to have such engines well beyond the blueprint stage. There is reason to believe each company will make public its version next year, and these GT units are expected to be installed in special one-of-a-kind Fiberglas sports cars.

In the new Ford Motor Company Research Laboratory, previewed by the press this spring as a highlight of the firm's 50th anniversary celebration, there is a department carrying the legend on its door—"Gas Turbine Section." Several designs already have been plotted here, with at least two diagrams displayed to the visiting newsmen.

Ford engineers point out that high costs and low economy mitigate against early adoption of gas turbines in this country. In their present status they give promise, how-

ever, of much lighter cars and radically different body designs.

According to Ford analyses, using the best GT components available, the performance of a given car—like the Lincoln—is considerably worse than that of a standard car when operated below 60 mph. Above that mark, GT-powered autos are far superior. At speeds between 20 and 40 mph, fuel consumption in a GT job is twice as much as when operated at speeds above a mile a minute.

General Motors' version is said to be an adaptation of turbines being used in other kinds of projects. It will be built by the Allison Division, producers of aircraft engines for the armed forces.

The first public display of this new engine will most likely be at the 1954 GM auto show in New York's Waldorf-Astoria Hotel. It will be fitted as a rear-engine drive in a two-seater.

That new auto show, by the way, is already taking shape, and GM's exhibition plans for the coming year will be nothing short of sensational if reported ideas are carried to completion. At least 10 experimental Fiberglas sports cars will

be unveiled, compared with four this year. At this time, it appears each car division will have two fancy jobs, plus two really special ones from the corporation itself, headed by the GT car. There is every prospect that these "show cars" will be made in triplicate for simultaneous showings around the country.

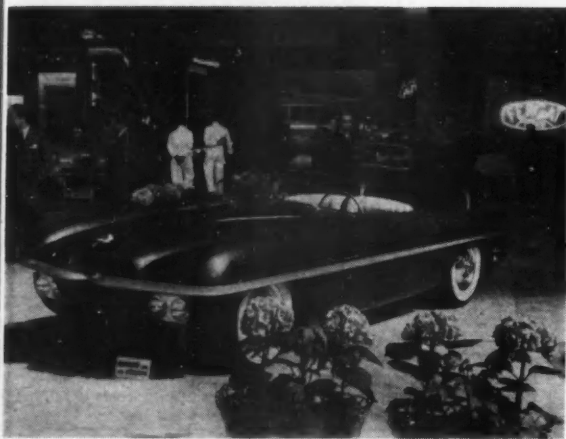
Another one of the "sports cars" shown by GM this year is rumored to be ready for production on a limited scale. Chevrolet's Corvette will be first, but Buick's Wildcat is likely to be the next. Contracts for body engineering layout have been let to a Michigan supplier for a slightly modified version. Planned for 1954 introduction, the car will be powered by a 220-bhp Buick V-8. Steel will replace Fiberglas in the production version of the new two-seater.

Specifications for the new competition Nash-Healey built in England for John Fitch to pilot in Italy's Mille Miglia and for two experienced teams to drive in France's Le Mans are just now reaching this country. No photographs are available yet, but the car itself will probably make some appearances in U.S. events this year.

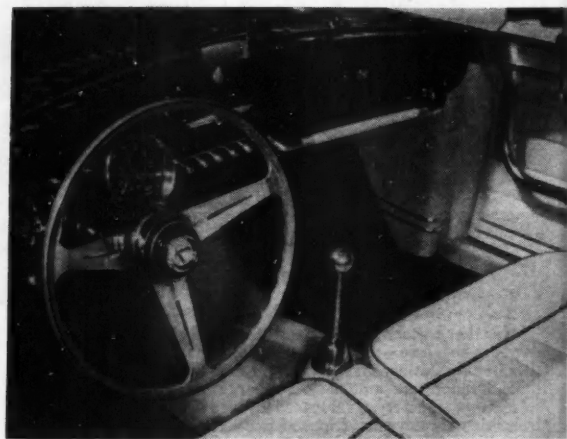
Engine and chassis are similar to the production two-seater. Power is supplied by a Nash Ambassador Le Mans Dual Jetfire engine, which is a six-cylinder ohv mill of 4138 cc. Bore and stroke are 3.5 x 4.375 inches. Compression ratio is 8.1. A British overdrive device is fitted to the three-speed gearbox and is set to function for second as well as high, resulting in five forward ratios. The driver flicks a switch instead of lifting his foot to cut in overdrive.

One of the unusual features is the method employed to cool brakes. An undershield runs almost the entire length of the body, but to increase air flow around the rear wheels it is swept in with a reverse curve. Large scoops attached to the front drums receive air directed by cut-back fenders.

(Continued on page 14)



Don't get excited, this isn't coming out of Detroit—yet. It's Ghia's latest contribution to the new look for Chrysler Cor-



poration products, the Dodge Fire Arrow, which appeared at the recent show in Turin, Italy. Pierced wheel is for lightness

22.28 MILES PER GALLON!

25-CAR AVERAGE
1953 MOBILGAS
ECONOMY RUN

IT DEMONSTRATED THE ECONOMY PERFORMANCE

MILEAGE BUILT INTO TODAY'S CARS WHEN RUN UNDER IDENTICAL COMPETITIVE, HIGH-SPEED CONDITIONS. IT GIVES YOU "PAR" FOR MILEAGE THAT IS WITHIN YOUR REACH.

MOBILGAS AND MOBIL OIL

WERE USED BY ALL CONTESTANTS.



THE RUGGED, 1206-MILE COURSE

NEVER BEFORE COVERED BY THE COMPETING CARS, RAN FROM LOS ANGELES VIA THE SAN JOAQUIN VALLEY TO STOCKTON, THEN OVER THE HIGH SIERRAS TO RENO, NORTH TO BOISE, AND ON INTO SUN VALLEY. IT REPRESENTED THE MAXIMUM ALTITUDE—19' TO 7400'—AND TEMPERATURE VARIATION—FROM NEAR FREEZING TO CLOSE TO 100 DEGREES—MOST MOTORISTS WOULD EXPERIENCE IN A FULL YEAR'S DRIVING.



EVERY ENTRY WAS

CERTIFIED STRICTLY

STOCK BY AMERICAN AUTOMOBILE ASSOCIATION OFFICIALS. OBSERVERS RODE IN EACH CAR TO ASSURE RULES BEING FOLLOWED.



CLASS WINNERS WERE:

CLASS A: Ford Mainline 6, 27.03 mpg; **CLASS B:** Hudson Jet, 22.05 mpg; **CLASS C:** Dodge V-8, 23.41 mpg; **CLASS D:** Studebaker Land Cruiser, 22.88 mpg; **CLASS E:** Nash Ambassador, 22.54 mpg; **CLASS F:** Nash Ambassador Custom, 21.11 mpg; **CLASS G:** Lincoln Capri, 19.94 mpg; **Special Lightweight Class:** Henry J Corsair 4, 28.25 mpg. The Sweepstakes winner was the Ford Mainline 6 with 27.03 miles per gallon.

HERE'S HOW YOUR FAVORITE PERFORMED

(These figures represent the best mileage of each make)

Miles per gallon		Miles per gallon		Miles per gallon	
Chrysler New Yorker	17.74	Kaiser Manhattan	22.27	Plymouth Cranbrook	22.83
De Soto Firedome V-8	20.92	Lincoln Capri	19.94	Studebaker Champion	26.86
Dodge V-8	23.41	Mercury Monterey	23.15	SPECIAL LIGHTWEIGHT CLASS	
Ford Mainline 6	27.03	Nash Ambassador	22.54	Henry J Corsair 4	28.25
Hudson Super Jet	25.42	Packard Clipper	18.67	Nash Rambler Super	25.37



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SPONSORED BY YOUR MOBILGAS DEALER AND GENERAL PETROLEUM

STEP UP PERFORMANCE! STEP UP...



GRAND "QUIET TONE" MUFFLERS specially designed and engineered for use in Dual Systems to obtain maximum efficiency and proper tone control. No "rapping," "cracking" or loud disagreeable roar — just a low, mellow, pleasant tone.

With a Grand Dual Exhaust System your car's performance and power will automatically be stepped-up . . . gas mileage increases from 10 to 20% — horsepower increases up to 20%. You'll enjoy an all around better automobile with faster getaways and more speed.

Also available is a complete line of Grand Tone Hollywood Type steel packed mufflers for all cars and Grand Dual Exhaust Header Systems for V-8 powered cars.

Available at better automotive dealers everywhere.



GRAND AUTOMOTIVE PRODUCTS CO.
Dept. MT-7 • 2501 W. 24th St. • Chicago 8, Ill.

Twelve

We're asking for it . . .

IN DISCUSSIONS with various people we encounter in a normal everyday life, the subject of our readers constantly arises. One statement recurs most frequently: "If there is one thing our readers are, they are responsive."

This is a wonderful thing. We not only like it; we are very appreciative. It is the best guide an editorial staff can have in continuing to put together a good package that will appeal to car owners.

If you have been picking up MT off the newsstands for very long, or if you are a subscriber, you know that in the span of a year we have asked for your opinion four times on as many subjects. Each time the response was terrific.

This is what we call "reader participation." Roughly it means that the reader,

through the medium of a questionnaire, becomes an integral part of the magazine. By putting down on paper his likes and dislikes, suggestions, criticisms, he becomes a voice that must be heeded. And believe us, we are not at all averse to taking suggestions and criticisms in the light that they are given.

So once more we are asking for it. What do you like and what don't you like about MOTOR TREND? To make it real easy for you we have written out every question. All you have to do is check the appropriate answer (except for two of them), clip the list and place it in an envelope, and address it to the Editor, MOTOR TREND. This is your magazine; let's hear from you.

—Walt Woron

Check and Mail

1. Do you like "Briefs"? Yes___ No___
2. Do you read "Letters"? Yes___ No___
3. Is "Spotlight on Detroit" interesting? Yes___ No___
4. Do you like stories on traffic and other related automotive problems? Yes___ No___
5. Are the road tests of particular interest to you? Yes___ Some___ None___
6. Do you like stories on racing? Yes___ Occasionally___ No___
7. Do you like stories on race cars? Yes___ Occasionally___ No___
8. Do you like stories on racing personalities? Yes___ Occasionally___ No___
9. Do you like stories on everyday motorists' problems? Yes___ No___
10. Do you like the exposé-type article? Yes___ No___
11. Are you interested in custom accessories? Yes___ No___
12. Are you interested in customizing your car? Yes___ No___
13. Do you like stories on custom cars? Yes___ No___
14. Do you read "European Newsletter"? Yes___ Sometimes___ No___
15. Do you like stories on custom builders or coachbuilders? Yes___ No___
16. Do you read "Classic Comments"? Yes___ No___
17. Do you like stories on classic cars? Yes___ No___
18. Do you read "Technical Service"? Yes___ No___
19. Do you like interview-type articles? Yes___ No___
20. Do you like stories on travel? Yes___ No___
21. Do you like to read about sports cars? Yes___ No___
22. Are you interested in sports car events? Yes___ No___
23. Do you like features on antiques? Yes___ No___
24. Do you read the Accessory Trials? Yes___ No___
25. Do you read "Sell 'N' Swap"? Yes___ No___
26. Do you read "Trends in Products"? Yes___ No___
27. What interested you most in this issue? _____

28. What was of secondary interest in this issue? _____

29. Do you read the entire magazine? Yes___ No___

30. Are you a subscriber? Yes___ No___

Motor Trend

July

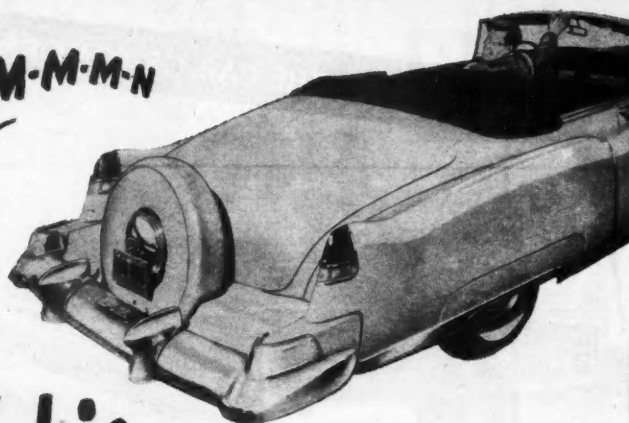
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M-M-M-M-M-N



"I LOVE his Continental Touch!"

The Newhouse Special CONTINENTAL KIT as low as \$29.95

Here's how to modernize—glamorize your car's appearance for a price everyone can afford! The sturdy, all-metal economy kit has much of the style and eye appeal of units costing 5 times as much. Our special low-budget price is possible because, in this installation, the tire stays in its original position in the trunk—(No one knows this but you!) In addition to the metal "Tire Cover," price includes chrome wheel disc, license holder, chrome lights, and all other parts as required. Installation is an easy few minutes' job . . . requires only 1/4" holes and no alterations to car body.

Ford '49-'52
Chev. '49-'52
Plym. '50-'52

Merc. '49-'51
Willys '52-'53
Pont. '49-'52

\$29⁹⁵

Send \$5.00 deposit, balance C.O.D.

Merc. '52-'53
Linc. '52-'53
Cad. '50-'52
Ford '53 only
Stude '53 only

Chev. '53 only
Chrys. '53 only
De Soto '53 only
Pont. '53 only
Olds '53 only

\$39⁹⁵

Style experts agree the **DELUXE CUSTOM CONTINENTAL KIT** gives your car longer, lower lines—the ultimate touch of sophistication. The Continental treatment adds utility, too—placing the spare tire outside increases usable luggage space up to 50%. Fabricated from heavier metal, these handsome DeLuxe Kits are complete with drop center gravel guard, full metal tire cover, special control lock release, chrome trim welts, special chrome hub cap, license light, safety lock assembly, rugged wheel mount brackets, heavy bumper extensions and all necessary nuts and bolts together with complete instructions.

Fords '49 thru '53	\$69.50	Plymouth '53	135.00
Chevrolet Styleline '49 thru '53	69.50	Dodge '53	135.00
Willys Aero '52 thru '53	116.50	De Soto '53	135.00
Nash Rambler '52 thru '53	116.50	Chrysler '53	135.00
Kaiser '47 thru '53	135.00	Studebaker '51 thru '52	139.50
Pontiac '50 thru '53	135.00	Mercury '51 thru '53	149.50

Olds '51 thru '53	149.50
Buick '52-'53 Super & R'dmaster	154.50
Cadillac '50 thru '53	159.50
Lincoln '51 thru '53	159.50
Packard '51 thru '53	159.50

Send 20% Deposit; Balance C.O.D.

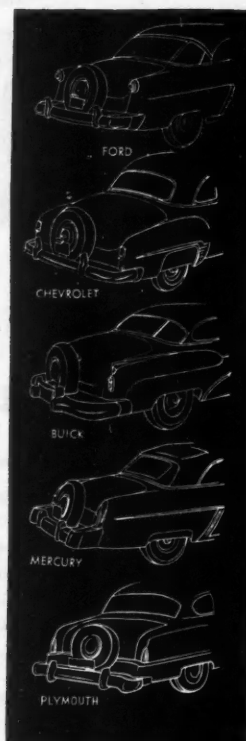
It's New! SMOOTHEE-LITE Custom Tail Light for your 52-53 Ford



Beautiful Smoother-Lite fits
Fords perfectly; may be adapted to many other cars.

The same ultra modern bullet type used by the nation's finest custom shops. Gives Fords a longer, smoother fender line. Made of heavy gauge steel, suitable for frenching if desired, or can be installed in 10 minutes using only a screwdriver. No wiring alterations required. Complete with lens and chrome trim ring. Long, streamlined. . . . Customize your car for a few dollars!

In primer, postpaid only **\$8⁹⁵** per pair
Triple chrome plated, postpaid **\$14⁹⁵** per pair



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AUTOMOTIVE INDUSTRIES
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DEALERS Write on your letterhead for free information.

World's Largest Distributor
of High-Performance Auto Parts

BIG 1953 CATALOG
Hundreds of Speed,
Power and Economy
products for all cars. 25¢



Dear Customer:

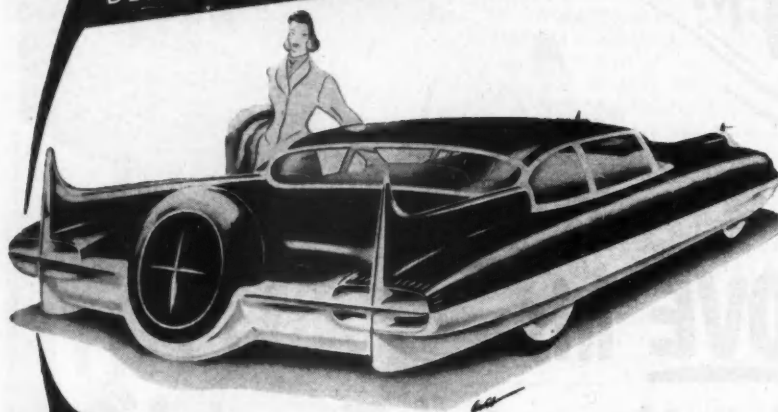
You can now order all your special equipment—heads, manifolds, cams, gauges, etc., etc., (any item for any car...any brand) direct BY MAIL from the great Newhouse stockrooms.

Just send a deposit and state your needs clearly—pay the balance C.O.D. All prices are strictly competitive.

Sincerely,

Ernest J. Newhouse

DESIGNED FOR THE CAR OF TOMORROW



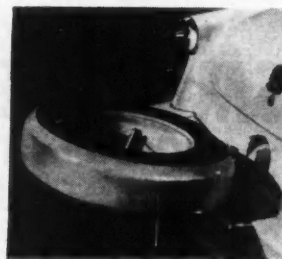
AVAILABLE FOR YOUR CAR TODAY



Buick—Cadillac—Chevrolet
Chrysler—DeSoto—Dodge
Ford—Lincoln—Mercury
Nash—Packard—Pontiac
Plymouth—Oldsmobile—Willys

the Original*  ENGINEERED
H-W **Continental**
CUSTOM REAR CONVERSION

First of an interesting series, this "car of tomorrow" is presented expressly to draw comments and suggestions which will guide us in future automotive styling. Created by Richard Arbib, one of our prominent associate designers, it features an advanced projection of the H-W *Continental*. But you need not wait. This impressive Custom Rear Conversion is available for your car today! It's not just a decorative item, but a major accessory that becomes an integral part of the body... blending beautifully with the car's lines... adding distinctive custom styling that draws envious attention. Yet it is moderately priced, has many practical, useful features, and increases greatly the trade-in value of your car. See the H-W *Continental* at your dealer's.



The floating latch, with push-button release in hub cap, prevents any rattling or shaking. To open trunk, just unlatch spare wheel and tilt back... with finger-tip control.

*The original *Continental* by Hudelson-Whitebone
—Pat. No. 2553686

HUDELSON-WHITBONE CO.

522 North Hickory St., Champaign, Illinois • 950 Van Ness Ave., San Francisco 9, Calif.

Fourteen

(Continued from page 10)

Hudson will build a sports car, as predicted several months ago in *Motor Trend*! This fact is confirmed by A. E. Barit, president, in a special message to company stockholders. It will use the Jet chassis and engine, which should give it bomb-like performance. Styling is to be a combination of American and European, and public display is expected this summer.

Returning the *Spotlight* to news about Detroit's stock car offerings, there is every indication that 1954 will see the "Horsepower Race" roaring ahead at full bore.

Chrysler, which tried to hold the line this year, is ready to bring out the long-heralded 220-bhp "FirePower" engine in '54 models. A quadri-jet carburetor with dual manifolding and larger valves accounts for the extra power.

Ford Motor Company is noncommittal on the subject, but its engineering department admits that if the company's various divisions call for more poop, it will be given. Ford's new ohv V-8 will probably be rated at 125 bhp, Mercury's ohv at about 150 bhp, and Lincoln's is not yet predictable.

Other futuristic news emanating from the various Ford Motor divisions indicates that Lincoln stylists are experimenting with the idea of a sports coupe for next year which would feature a plexiglas canopy over a five-seat cockpit, in much the same fashion as is being shown currently on the experimental XL-500 (May '53 MT).

Look for Mercury to adopt the ball-joint suspension next year. This will be done to achieve a lower car and to keep hood lines down in view of the new higher ohv engine. Ford cars are also expected to introduce a new suspension featuring a radically redesigned stabilizer bar. They could also have ball joints.

Throughout the auto industry, braking will be improved tremendously in 1954 and the immediate years ahead. Disc brakes are apt to be more widely used, while in all lines air cooling will be more generally utilized to help prevent fade. Another development is a solenoid mechanism to prevent wheel slide in severe braking.

H. L. Middleton, VP in Charge of Engineering for Auto-Lite, Toledo, Ohio, goes so far as to predict that eventually electro-hydraulic brakes will be introduced and that these will meet the heat problem generated by higher average car speeds.

Another safety advancement forecast by this engineer is a gaseous headlight to provide contrast lighting. The objective is to get greater definition between autos, pedestrians, and other objects on or near the roadway. It might be provided by banks or panels of gaseous tubes in bumper wells, he says.

Auto-Lite also is developing a low-cost air-conditioning unit for the average motorist. Price, when introduced, will be well below the current \$600 mark.

Power steering will continue to spread in 1954. Hudson has recently completed arrangements with a supplier for a device

(Continued on page 18)

Motor Trend

(Editor
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A simple gadget that will save radiator wear and give your engine longer life

The McRay Protecto Rod

(Editor's note: Eric Rickman, top-notch MOTOR TREND photographer, is a familiar figure in the pits, in the shops, at the tracks . . . wherever there's motor action. Rick knows cars, likes cars. He is the TRENDER who first discovered the McRay Protecto Rod, tried it . . . well, let him tell it . . .)

CRIMINY—it works!

That's pretty good for a starter. What is it and how does it work?

It's a series of zinc and copper plates on a stainless steel spring core, with rubber bumpers at each end to prevent noisy contact with the radiator tank walls and damage to the radiator. You just insert the Rod through the neck of the radiator into the tank; it's held in place by an expansion ring attached to a brass chain which fastens to the radiator cap. Want to see what it looks like . . . see that picture up top. This "battery" is activated by the hot water in the motor and sets up a galvanic electric field which renders IN-ERT all scale forming salts, neutralizes corrosive action of the oxygen, ammonia, and other active elements of ordinary water. This galvanic action loosens scale deposits in old cars for easy flushing, and keeps new motors completely scale and rust free.

How did you happen to find the Rod?

We were down at the Barish Chrysler-Plymouth agency starting the MT motor trial of the '52 Plymouth when the agency mechanics removed the radiator of a 1949 Plymouth which had been equipped with a Protecto Rod for 18 months. The block and radiator of that '49 looked like new, without a trace of rust or scale. I figured if it could do that for a Plymouth, it could do the same for my Chevrolet.

And?

The water in the Chevy radiator was dirty with rust, scum and scale when I installed the Rod three months ago. . . .

And?

Take a look at it . . . pure as an editor's heart! That's the thing that gets me . . . I haven't flushed the radiator or touched it in any way, but the water has cleared up completely.

A convincing commentary, Rick . . . have you any supplementary evidence to prove that this is not just a pleasant fiction?

Yeah. . . . We've run four other tests here at MOTOR TREND to check mine. In every case the results were the same—cool, clear water, like the song. To give our case authority we put the McRay Protecto Rod through a lab test to check its influence on corrosion.

METHOD OF TEST: The test metals were bolted together and fastened to the McRay Rod. A control metal sample without the Rod was also prepared and both samples placed in tap water and heated to 160° F for 100 hours with aeration. The samples were weighed before and after testing. Corrosion is expressed in loss of weight per square inch.

TEST DATA:

	Loss of weight in milligrams	per square inch
	WITHOUT INHIBITOR	COUPLED TO PROTECTO ROD
METAL		
Aluminum	0.6	No loss
Steel	10.0	5.1
Cast Iron	23.3	11.1
Copper	No loss	No loss
Brass	No loss	No loss

Sounds like a pretty effective way, Rick, to keep a cool efficient motor under that hood . . . is the Protecto Rod available anywhere?

Yes, everywhere.

—Rollin Mack

ADVERTISEMENT

MOTOR TREND

Reports on an amazing new way to solve engine cooling problems

Stop Radiator Rust **FOREVER!**

Rust and scale accumulating 24 hours a day in your radiator and water jackets can quickly cripple your engine. First, these deposits cut the efficiency of the cooling system, causing overheating, wasting gasoline, wasting power. Then, because overheated oil loses its lubricating efficiency, excessive cylinder and bearing wear takes place rapidly—making an overhaul necessary thousands of miles sooner than if your cooling system were working efficiently. Sooner or later, the entire radiator core must be replaced at a cost of \$45 to \$110.

DANGER AHEAD!

Most drivers don't realize how much damage rust and corrosion have already caused until warmer weather—when it's too late. Right now is the time to prevent costly engine damage—before it takes place!

PREVENT DAMAGE THIS WAY

Here's a simple two-way treatment that effectively and permanently prevents radiator trouble—will even correct it in older cars where rust and scale deposits have already made the radiator useless (see MOTOR TREND'S test at left).

First part of this Radiator Kit is the McRay Protecto Rod described at left. Fitted with a Neoprene hanger which is impervious to heat, cold, anti-freeze, etc., it is flexible and can be installed in any radiator easily—even if radiator has baffle plates. Rod sets up mild galvanic action which makes it impossible for rust or scale to stick to radiator or block; also neutralizes harmful action of oxygen, ammonia and minerals present in nearly all water. Can't harm water, rubber, metal or any part of your car. Included with Protecto Rod in Radiator Kit is a generous package of "Leak-Seal"—a cold solder which not only seals radiator leaks from the inside, but is also an effective water pump lubricant.

WRITE TODAY FOR NO-RISK TRIAL

For complete Radiator Kit, including both the Protecto Rod and "Leak-Seal," send only \$2.98; we pay postage (heavy-duty kit for tractors, trucks, buses \$4.95). Or order C.O.D. (you pay postal charges). If you are not entirely satisfied, return only the Protecto Rod for full refund and keep the "Leak-Seal" for your trouble. Take advantage of this special trial offer; write today!

**BARLEC'S, Dept. BP-7
1044 S. Robertson Blvd.
Los Angeles 35, Calif.**



**BARLEC'S, Dept. BP-7
1044 S. Robertson Blvd.
Los Angeles 35, Calif.**

Please send me complete Radiator Kit for 15-day free trial. If not entirely satisfied, I may return Protecto Rod for full refund and keep "Leak-Seal" for my trouble.

I enclose: () \$2.98 for regular size

Send C.O.D. () \$4.95 for truck size

Name _____

Address _____

City _____ Zone _____ State _____

THE MALLORY PRODUCTS ADVERTISED ON THE OPPOSITE PAGE ARE SOLD BY THE FOLLOWING CONCERNS:

Just a few have been listed. If your city is not included, write to the factory for name of the dealer nearest you.

ALABAMA		MONTANA	
Birmingham	E. Greenberg Auto Parts Co., 1131 Third Ave., N.	Billings	C. & J. Parts Service, 5 North 35th St.
CALIFORNIA		Butte	Automotive Supply, 115 S. Arizona
Los Angeles	J. F. Dixon Company, 1835 S. Hope St.	NEW JERSEY	
San Francisco	H. G. Makelin Magneto Repair Co., 1583 Howard St.	Camden	Eastern Speed Parts, 1012 Federal St.
COLORADO			Harry K. Pape, 1429 Haddon Ave.
Denver	Pille Bros., Inc., 748 Broadway	NEW YORK	
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	Roberts Brothers Co., 17th & U Sts., N.W.	Rochester	Harmon Automotive Corp., 16 Charlotte St.
	Stricks Automotive, 1816 14th St., N.W.	NORTH CAROLINA	
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	203 W. Ponce de Leon Ave.	Columbus	Stromberg Sales & Service, 3330 Superior Ave., N.E.
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	1015 Chicago Ave.		Motor Ignition Co., 1526 Fairmount Ave.
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	R. L. Bilger, 311 W. High St.,		Joe's Carburetor & Ignition Service,
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	Moutoux Auto & Machine Co., 517 Locust	SOUTH CAROLINA	
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	Allison Supply Company	Chattanooga	Honest Charley Speed Shop, 1100 McCallie Ave.
Kendallville	Tom Cherry Automotive Engineering,	Knoxville	The Muffler Shop, 629 N. Gay St.
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	Manufacturers Brokerage Co., 114-116 Pattie	Dallas	Custom Automotive, 2122 N. Pearl St.
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Baltimore	Capitol Speed Parts, 3032 S. Hanover St.	Chase City	Tucker-Bevell Motors, 5th & Main Sts.
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	Lee's Gratiot-8 Mile Auto Supply, 15403 Gratiot	Tacoma	Wright's Automotive Service, 710 Commerce St.
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Jackson	C. E. Hamlin Co., 225 N. Jackson St.		VA., W. VA.)
Lincoln Park	Genuine Parts & Supply, Inc., 1455 Fort St.		Eastern Garage, Inc., 411 Elizabeth
Saginaw	Ken-Russ Speed Equipment, 907 E. Genesee	WISCONSIN	
St. Claire Shores	Boyer-Foster, Inc., 22950 Harper Ave.	Milwaukee	Midwest Speed & Power Equipment Co.,
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Kansas City	Becker-Florence Electric Co., 1611 Oak St.	Windsor, Ont.	CANADA
			Stewart McLaren Co. of Canada,
			P. O. Box 481 (SALES REPR.)



Mallory

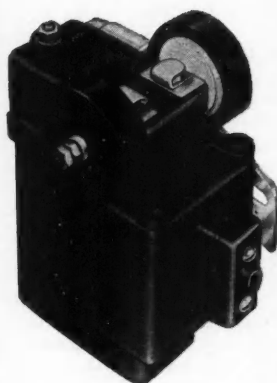
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REGISTERED U. S. PATENT OFFICE



THE MALLORY IGNITION LINE

A WORTH-WHILE DEALER SET-UP



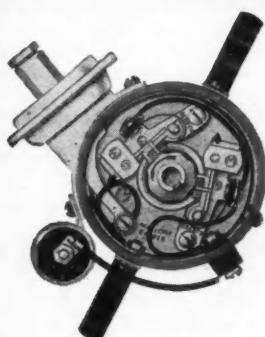
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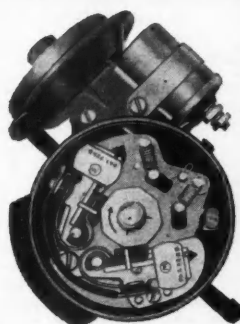
ASSEMBLY NO. 25000
BALL BEARING — DUAL-POINT
ADVANCE PLATE
(FOR DELCO)
WITH STABILIZED BREAKERS



STABILIZED BREAKERS



MALLORY CONDENSER



ASSEMBLY NO. 24900
DUAL-POINT
IGNITION CONVERSION
(FOR FORD)
WITH STABILIZED BREAKERS

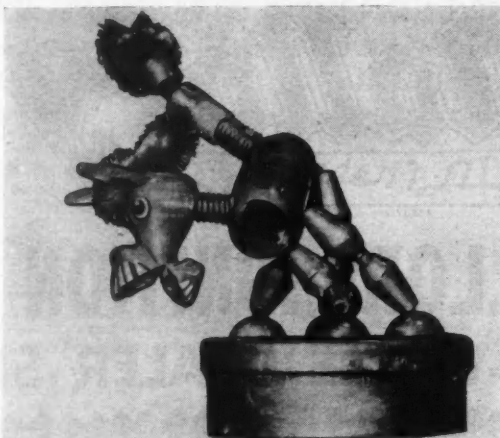
MALLORY ELECTRIC CORPORATION — 12416 CLOVERDALE — DETROIT 4, MICH.

Educated Horse Newest Fad!

Here's the wackiest, zaniest traveling companion you ever had!

Part vacuum gauge and part pure fun, Cyril, the Educated Horse puts on a private show for you right on your dashboard—kicking up a fuss every time you do anything that wastes gas or sets your car up as ready for the repair shop.

U. S. Patent No. 2,607,314



Just for Laughs

According to an ancient legend we thought up about two weeks ago, Cyril, the Educated Horse loves cars, hates gas pumps and repair bills. That's why he goes through all kinds of tortured acrobatics whenever you abuse your car.

And what acrobatics! Girls are crazy about this fugitive from a glue factory, and kids laugh out loud (note to parents: good way to keep the little so-and-so's occupied!) You may even fall in love with this horse yourself, but that's your affair.

Just for Laughs?

Not entirely. Actually, this talking horse talks sense, because it's an engine performance indicator that works on the same principle as the most expensive vacuum gauges used by mechanics. A free instruction booklet tells how this horse's antics diagnose every engine condition from wrong spark gap setting to scoured cylinders. In fact, some people claim that Cyril, the Educated Horse, is a better engine diagnostician than some mechanics (note to mechanics: no offense intended). Fits all cars, trucks, tractors, buses—even boats.

WARNING: Install the Educated Horse yourself (it's easy). Don't let your mechanic or anybody else do the job, or they'll talk you into selling your horse for two or three times what you paid—and you'll miss all the fun!

Just for Laughs!

If you hurry, you may be the first in your neighborhood to sport this money-saving mascot (guaranteed to save you gas or your money back), so send today! Choice of colors: metallic black, gray, iridescent yellow, green, red, \$4.75 postpaid including copper and special neoprene tubing, or 2 (twice the laughs) for \$8.95 postpaid. Offhand, we can't think of any reason why you wouldn't like the Educated Horse, but we'll guarantee it anyway: if you don't save gas (we mean it!) as well as have fun, just return Cyril; we'll return your dough and the laugh will be on us!

MEHREN INDUSTRIES

207 Mehren Building, Beverly Hills, Calif.

Mehren Industries,
207 Mehren Building, Beverly Hills, Calif.

Gentlemen:

Just for laughs, send me a Educated Horse.

(color)

Or, better still, send me two: and

(color)

(color)

I enclose ☐ \$4.75 for one; ☐ \$8.95 for two; you will pay postage. ☐ Send C.O.D.; I will pay postal charges.

Name.....

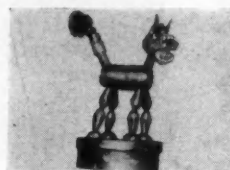
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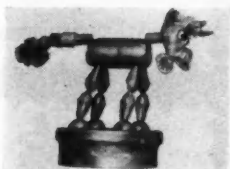
Copyright 1953, Mehren Industries



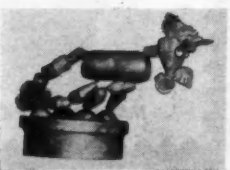
When the Educated Horse stands straight and steady, you're saving gas and getting peak performance. If tail wags, better check valves before trouble becomes serious.



When tail and hind end droops, your car's tail is dragging, too. Check carburetor; gas mixture probably too lean.



When the Educated Horse acts drunk (head & tail weaving), it means exactly that; your engine is getting too much to drink. Check carburetor mixture.



If the Educated Horse collapses and won't get up, don't keep on buying oats for a dead horse; get an engine tuneup before you go broke buying gas.

(Continued from page 14)

similar to the GM unit. Ford may offer one before this year is out, and Dodge is known to be shopping. At this time, only Henry J, Plymouth, and Willys appear to have no immediate plans for power steering.

Several new engineering developments have been announced in the industry. A static-electricity ignition system is being perfected by a western manufacturer, while Mercury and Kaiser-Fraser are adding power steering to their lists of optional equipment.

The ignition system is said to require no adjustment or timing throughout its entire life. Engine speeds up to 6000 rpm are obtainable along with compression ratios of 12:1, since breaker points are eliminated. Spark plug fouling and burned electrodes also cease to be problems. Key to the development is a static electricity generator invented in France. Adaptation to American engines is being undertaken by Hackethorn Manufacturing and Supply Company, Denver, Colo.

Mercury's power steering is the linkage booster type, featuring a separate power-cylinder mounted crosswise of the car and attached through rubber to the steering mechanism at the right-hand frame siderail.

Steering wheel rim pressures of approximately three pounds at cruising speeds to about 8½ pounds pull in parking are recorded. List price of the unit is \$140.

Kaiser-Fraser's power steering device is the one made by Monroe Auto Equipment, described last month. This unit is the least expensive of all those currently on the market, listing for \$121.95.

Word is also out in Detroit that the "go-ahead" has been given at Lincoln for a new Continental. A large, talented staff has been assigned to the project, and introduction has been set for 1956.

Chrysler is presenting a new hardtop on the Imperial chassis. The car is powered by a 180-bhp engine and is fitted to a 131½-inch wheelbase chassis. Power steering is offered as optional equipment.

K-F's new model is called the "Carolina." Offered in two- and four-door sedan body styles, it sells for \$150 less than deluxe models. It features a choice of standard, overdrive, or Dual Range Hydra-Matic transmissions.

Dodge is bringing out a "Coronet" six-cylinder model. The luxury upholstery and trim found in the V-8 line will be standard in this new lower-priced series.

—Harry Cushing



IN WIRE WHEEL DISCS IT'S



THE ULTIMATE IN CONTINENTAL STYLING



Monte Carlo Model
set of 4 retails at
\$89.50
Fed. Tax Included

The magnificent Gay-Lord Monte Carlo Model... for discriminating motorists who demand the best. De Luxe authentic "knock-off" type hub... new extra-heavy gauge stainless steel wire spokes.

The Gay-Lord Standard Model... with graceful "knock-off" type hubs included. Heavy gauge stainless steel spokes. Priced for the popular market.



Standard Model
set of 4 retails at
\$79.50
Fed. Tax Included

Now, you have two great Gay-Lord wire wheel disc models to choose from—the magnificent Monte Carlo model or the functionally modern Standard model. Both exquisitely styled, both painstakingly crafted, each model offers you a lavish look in continental styling never before equalled. Whether your automobile is new or old, let dazzling Gay-Lord wire wheel discs "dress up" your car in the fashionable continental look of luxury that is sweeping the country.

Here's Why Gay-Lord Wire Wheel Discs Are Tops In The Field!

AUTHENTIC STYLE... the *only* authentic continental styled wire wheel discs with authentic "knock-off" type hubs.

EASY TO INSTALL... simply "snap" into place like any conventional hub cap. No interference with wheel balance weights.

SOLID CONSTRUCTION... one piece construction for rigidity, perfect wheel balance.

NOISELESS... all spokes permanently attached at both ends.

Fit Any Car With 15-Inch Wheels

10 DAY FREE TRIAL MONEY BACK GUARANTEE

© 1953 GSI

GAY-LORD AUTOMOTIVE DIVISION
Gaylord-Shelton Inc., Dept. MT-7
1918 Prairie Avenue, Chicago 16, Illinois

Please send me at once.....sets of Gay-Lord Wire Wheel Discs indicated.

- ☐ Monte Carlo Model. Only \$89.50, Fed. Tax Incl.
- ☐ Standard Model. Only \$79.50, Fed. Tax Incl.
- ☐ Check or money order for full amount enclosed.
- ☐ C.O.D. Full amount and shipping charges to be paid on delivery.

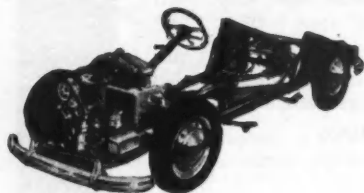
Name.....

Street Address.....

City.....Zone.....State.....
Add 2% Sales Tax in Illinois

GAY-LORD AUTOMOTIVE DIVISION
Gaylord-Shelton Inc.
1918 Prairie Avenue • Chicago 16, Illinois

Get your fast ride—
in civilised comfort!



The special tubular chassis gives great rigidity and strength.



The Jupiter gets you there fast—but in luxurious comfort.

THE JUPITER is the car to take you places—*fast!* The car rips along at a genuine 90 m.p.h. But heavens what a relief—you and your passenger sit serenely in civilized all-weather comfort. The wind-up glass windows see to that, so does the tough all-weather folding top. The upholstery is luxurious and there's luggage space in the back. To all these advantages add 30 miles to the gallon of gas. Just think it over!

1½ litre class winner of 10 major trials and races

1950—1st—Le Mans 24 Hour Grand Prix *

1951—1st & 2nd—Monte Carlo Rally; 1st—Lisbon Rally

1st—Bremgarten Sports Car Race; 1st Rheineck/Walzenhausen Hill Climb; 1st—Le Mans 24 Hour Grand Prix *

1st & 2nd—R.A.C. Tourist Trophy

1st—Watkins Glen Meeting—1½ litre race; 1st Rallye de l'Iseran

1952—1st—Le Mans 24 Hour Grand Prix *


* Class winner three times running

The 1½ litre **JOWETT JUPITER**
—BRITAIN'S BEST IN THE CLASS—



JOWETT CARS LIMITED, IDLE, BRADFORD, YORKSHIRE, ENGLAND

JOWETT DISTRIBUTORS: **WORLDWIDE IMPORT INC.**, 1805 Westwood Blvd., Los Angeles 25
MAJOR R. SEDDON, 290 Park Ave., New York City



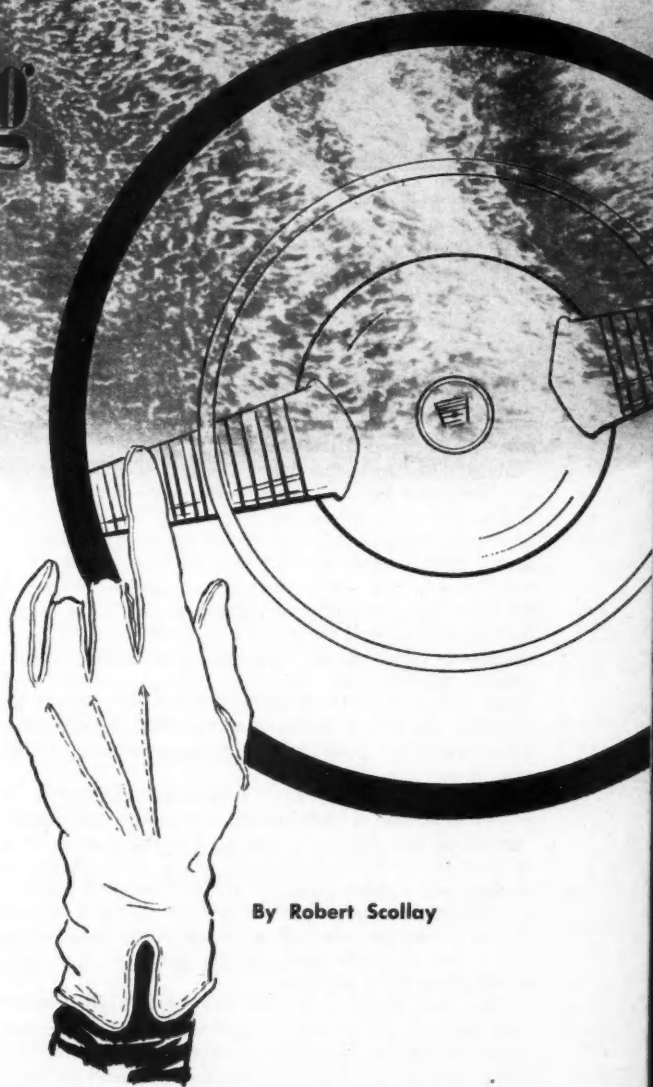
is Power Steering here to stay?

Its future lies in proper geometry and weight distribution

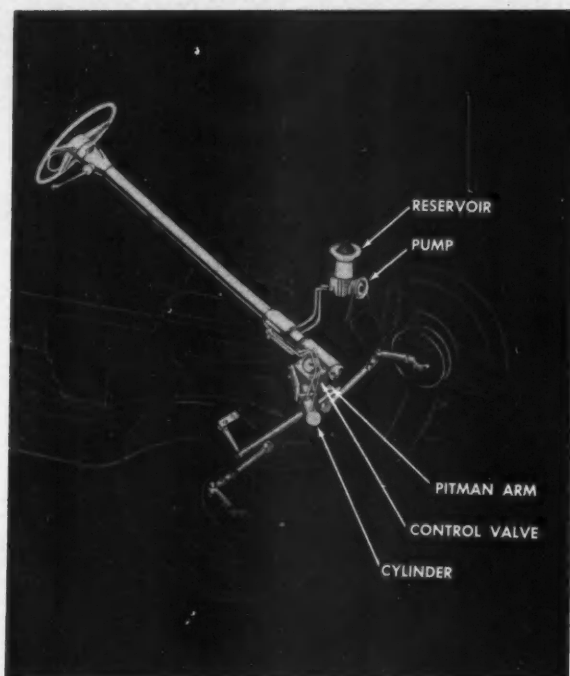
ALMOST TWO YEARS AGO, one of the leading steering gear manufacturers hit the nail on the head in an advertising brochure on power steering. The opening statement wound up like this: "This report is timely because steering promises to be a major subject of discussion among car owners and prospects for the next several years." How true!

Power steering—the big news in this "major subject of discussion"—is evidently headed toward increasing acceptance because it has real advantages. Any reasons for the public's rejecting power steering seem to be principally psychological and involve breaking old established habits, techniques, and impressions gained from driving with ordinary steering. We have become accustomed to using considerable muscle power on the steering wheel when driving and parking. In doing so, we have developed some deep-seated ideas about how steering should "feel." Power steering has now changed or eliminated much of this feel and we have to train ourselves to meet these new driving requirements.

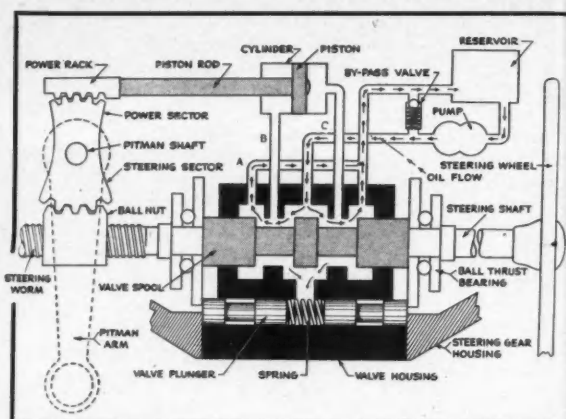
If you often steer small boats, you are used to very little feel at the wheel. On larger vessels, where turning the rudder is beyond the muscle capacity of the helmsman, steering engines are used which virtually eliminate feel



By Robert Scollay



Some sort of a power steering device will soon be available on nearly every American car. Here are the parts shown in the schematic at right, in this case in their proper location in the chassis. The problem of a cluttered engine compartment is one that will demand the attention of auto engineers



What goes on when you turn the wheel of a car with power steering? In the Saginaw system (used by GM and Lincoln), five valve plunger springs will resist you with a total load of 300 pounds (only one shows, indicated at bottom of drawing). To put the booster into operation, you have to exceed this load, but it only takes three pounds at the wheel to do so. When you turn the wheel to the left, a ball-bearing screw and nut forces the whole shaft, including the valve spool (shaded) to the right. This partially shuts off tube A, so the oil, under high pressure, goes up tube B and pushes the piston to the right, taking with it the piston rod and power rack, and moving the pitman arm clockwise. Seven pounds of force at the steering wheel closes tube A completely. Turning the wheel to the right sends the valve spool to the left; oil goes up tube C and reverses the process. When you are through turning, the high-pressure oil acts on the inner surfaces of the valve plunger to center the car

Power Steering Continued

at the helm. In both large ships and power-steered automobiles, however, the steering job is easier.

Many of us remember when Dodge and Buick had novel gear shifting sequences, and nostalgic memories still exist regarding the idiosyncrasies of the Model T transmission. If these much more complicated changes could be easily mastered, getting used to power steering should be like rolling off a log. Most people will agree with this prognosis because they probably almost kicked the floorboards out while trying to find the clutch pedal on the first car they drove with a fully automatic transmission. Today a considerable number of drivers will claim that the clutch pedal is as obsolete as a crank and that they are getting along fine without either. And they don't seem bothered because their automatic transmission operates quite differently from the one on the car next door.

Power steering is a child of engineering compromise. While it can now take a definite place in automobile design, its various parents differ regarding its upbringing. One of these differences involves steering gear ratios. To meet the public demand for increased passenger comfort, designers were forced to push the engine forward to get the rear seat in front of the rear axle for easy riding and a lower body silhouette, and to provide trunk space, thereby increasing the proportion of weight on the front wheels.

Then they added soft-riding, low-pressure tires, with their large areas in contact with the pavement. To compensate for these two factors, they had to increase manual steering gear ratios so that steering effort could be reduced to meet the physical limitations of the average driver. This, of course, meant easier turns of the wheel (but more of them) when parking or turning corners. Some cars recently tested by MT

Research have steering gear ratios so high that they require $5\frac{1}{2}$ turns of the wheel from lock to lock. Steering gear ratios in American cars have reached a high of 29:1 during the past few years, and the average today is approximately 20:1. High ratios are definitely undesirable, for they mean slower response. They exist only to overcome large variations in weight distribution, to which passenger cars are subjected, and present-day tire design. Sports cars, with major shifts in weight distribution not a consideration and actual weight carried considerably less, do not require high steering ratios and are consequently more nimble and controllable. The low ratios used on sports cars require only about a quarter turn of the wheel to negotiate a sharp 90-degree turn. Ratios used on most American passenger cars require many more turns of the steering wheel to perform that frequent maneuver.

Some manufacturers have stuck with high ratios even in their cars equipped with power steering. They claim that drivers will thus have less to learn in handling cars equipped with power steering, and that an enormous amount of effort would not be required if the power system should fail. Other car makers have reduced steering gear ratios. Power-steered cars with reduced ratios require about 40 per cent less steering wheel movement.

Steering gear ratios must be reduced to get the full advantages of power steering. Quick, responsive steering is as important as good brakes in avoiding such hazards as sudden chuckholes or some knothead driver with a tummy full of martinis. In parking a car with power steering there seems little excuse for the ponderous winding and unwinding of the wheel necessary with a high ratio. The driving public as a whole is an intelligent and adaptable group of people. It seems a shadow on their intelligence to imply that they cannot learn new steering techniques quickly and are therefore to be denied the safety of more responsive steering. Failure of the power system will

require the driver to exert considerably more steering effort if his car has a lower steering ratio. Drivers throughout the years, however, have proved themselves adaptable enough to recognize such an occurrence as an emergency and to take proper precautions until repairs are made.

Any discussion of steering is incomplete without some mention of steering geometry. Steering geometry controls most of the complex things the front wheels of a car do while in motion. A principal stockholder with a controlling interest in this subject is caster. Caster is the angle that the front wheel steering pivots (the kingpins) make with a vertical line when seen from the side of the wheel. An easy way to understand caster is to consider a bicycle. As we all know, the front wheel hub on a bicycle is located some distance forward of the center pivot of the handlebars because the steering fork is inclined forward. This forces the front wheel into a straight-ahead position, accounting for the "look, Ma, no hands" technique of riding a bike.

This brings us back to one of the steering compromises made to weight distribution. A properly engineered caster angle on any car means simply that while the car will "track" or follow a straight path in motion, the driver will be forced to lift the front end back and forth against the caster when turning or edging into a parking space. Designers of our nose-heavy cars have been forced to reduce the caster angle in order to reduce low-speed steering effort. This, of course, means easier parking but lessens tracking qualities and roadability at higher speeds. Power steering now makes it possible to integrate a caster angle favorable to roadability into the overall front-end geometry. So far, this has not been done. Cars retain small caster angles even when equipped with power steering.

Power steering systems, with the exception of the Borg-Warner mechanical unit used on the Studebakers, utilize a hydraulic booster to cut down steering effort. The hydraulic systems consist of an engine-driven pump, one double- or two single-acting cylinders, and control valves actuated by moving the steering wheel or steering linkage. General Motors, Chrysler Corporation, and Lincoln have incorporated valves and the hydraulic booster cylinder into the steering gear. Packard and Nash have the valves and cylinder attached directly to the steering linkage. All hydraulic systems have bypass valves which allow the system to revert automatically to manual control in the event of a stalled engine, broken oil lines, a dam-

aged pump, or other failures of the power system. The Studebaker mechanical unit consists of two engine-driven overrunning clutches which are incorporated into the steering gear. Movement of the steering wheel will engage one or the other of these clutches and apply a mechanical assist to the gear.

Differences in opinion between designers of power steering systems seem to lie in their anticipation of public reaction. General Motors and Lincoln designers have utilized centering springs in the control valve to make the unit inoperative until three pounds of pressure is applied to the rim of the steering wheel. At this point, the valve starts to operate; at about seven pounds pull, it is fully closed. Justification for this design is based upon the assumption that the average driver will expend very little effort to steer a straight path and will retain full road feel on the highway.

Chrysler, on the other hand, uses a valving system which makes the system operative upon even the slightest movement of the steering wheel. Even a small degree of steering effort, they say, can spell unnecessary driver fatigue on a long trip. Nash, Packard, and Studebaker designs seem to take a middle road between the other schools of thought. These differences of opinion are refreshing, for buyers have a choice and can decide which system suits their individual desires.

Power steering is not new. It has been tried and tested for several years on military equipment, road-building vehicles, buses, and heavy trucks. Present trends in automobile design have made its application to passenger cars imperative if we desire a better measure of safety and convenience. Driver fatigue is not statistically measurable as a contributing factor in accidents, but common sense indicates that it plays an important part. The buffer action of the hydraulic cylinder in a power steering system can reduce tiring road shock. It removes most of the threat of blowouts, which do occur even today. And lessened steering effort can help keep any driver out of trouble in a whole multitude of possible situations.

Today manufacturers offer power steering as an accessory item, but tomorrow you may find it as standard equipment on many cars—especially in the higher price class. In its present form it has numerous advantages, and if completely integrated with good steering ratios and optimum front-end design it could vastly improve the efficiency, safety, and fun we should expect from our cars. Power steering is not in the gadget class—it is here to stay.

WHAT WE'VE SAID IN OUR ROAD TEST REPORTS . . .

Just a year ago, when MOTOR TREND tested its first car equipped with power steering, we warned: "Power steering is an extremely sensitive tool, and caution should be observed in learning its use." Last fall, we had dug up a bug or two: "The 'feel' is no longer there . . . You may find yourself in trouble during high-speed cornering, or even in an emergency at low speeds . . . When the wheels were thrown into a side-to-side action the power unit took over—had to hang on to avoid trouble." By this spring, we were warming up: "On further familiarity, overshooting the mark seems unlikely." And, last month, the consensus: "As we road test more cars with power steering, it becomes evident that the greatest problem is getting used to it."



"The only real way to test a car," one of our readers recently said, "is to drive it for long periods of time, preferably on a cross-country trip." That we did . . . and now here is the complete report of our

CROSS-COUNTRY TEST

An MT Research Road Test Report
By Walt Woron

WOULD YOU DARE to drive the Willys cross-country? You certainly wouldn't get a ride as comfortable as our car would give. You'd be worn out by the time you got to Los Angeles."

As you might suspect (if you're a steady reader of *MOTOR TREND*) these comments were tossed at us after we came out with our annual Engineering Achievement Award (Feb. '53 MT), in which Willys was second in overall standings. Although we said nothing about ride at that time, we had previously said (May '52 MT) that the then-new Aero Willys " . . . rides like any good American car—softly, gently, never bottoming its springs. The passengers are cradled gently between the axles and enjoy top comfort as a result." And we were prepared to back up these statements.

We therefore got in touch with the Willys people in Toledo. When we asked

for a car to be driven from Toledo to Los Angeles (not mentioning the previous conversation) the answer was a polite "no"—but with reservations. Would we mind picking it up in New York, making it a *real* cross-country jaunt? We thought the idea was great and we carried through.

Which brings us around to the question that's probably in your mind, "Well, were you worn out? How does the Willys compare in ride to other cars?"

We're happy to report that our convictions were proven out. The Willys has a ride of a much heavier car. It actually excels in this department, as it does in handling. Far from being tired or worn out, we had one of our most enjoyable rides cross-country in a long time. On one extremely long stretch (27 hours straight behind the wheel, with time out only for fueling up and eating, no sleep), we were not any more tired than if we had driven a much shorter time or had driven one of the so-called "plush-ride" cars.

How does it give such a good ride? The generally accepted idea that it takes a long wheelbase to give a good ride does not necessarily hold true. A proper blending of spring rates and loading along with adequate shock absorbers can give a good ride. The Willys is a good example of such harmonious blending. Normal highway dips and bumps can be taken with ease. At legal maximum speeds severe dips can cause bottoming. There is considerable front end oscillation going over such dips, but since you are positioned equidistant from each axle, you do not feel the oscillation. Sidesway, pitch, or roll are not noticed going over any dips. Body vibration is apparent on washboard roads, smoothing out some as speed increases.

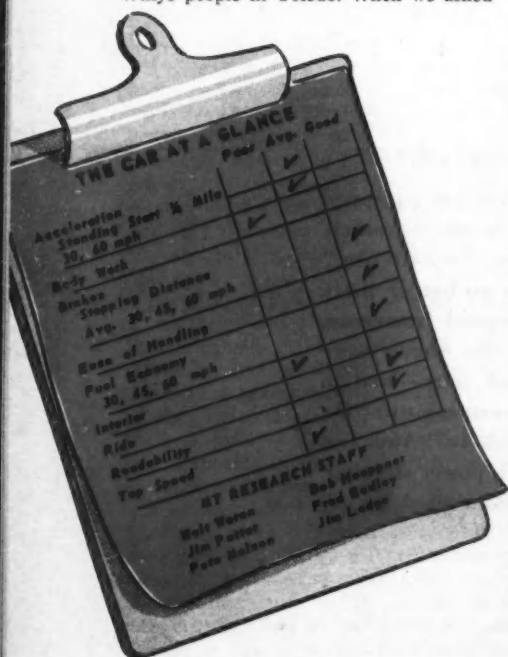
But it's small. How can it be comfortable to drive or ride in? A driver's comfort can only be properly evaluated after a prolonged time behind the wheel. For periods of short duration your body will adjust itself to certain conditions in posture without complaint, which become

very tiresome if maintained the better part of a day (such as would be required in cross-country travel). It involves many factors such as legroom, seat height, degree of support offered, steering wheel height and distance from the seatback. The right combination will allow extended time behind the wheel with little fatigue. This the Willys has, otherwise the 27-hour stint previously mentioned would not have been possible.

Adding considerably to comfort is the absence of wind noise, the continual roar and buffeting usually encountered at highway cruising speeds with the driver's window down. You can hear the radio or talk in normal tones, whether the window is up or down. Road noise is adequately suppressed by a multitude of rubber cushions that insulate and absorb any vibration occurring in the engine, drive line and suspension system.

Is it an easy car to drive? In this department the Willys should satisfy even the most discriminating. Low overall weight as well as smaller cross-section tires (6.40 x 15) allow for quick control. Driving the Willys is pleasurable. It's unusually well adapted to modern city traffic conditions. The combination of easy steering, responsive brakes, and excellent vision (in which both front and rear fenders, and the road, a short 10 feet in front of the bumper, are all visible to the driver) are distinct aids in maneuvering the car into limited areas.

Does it still excel in handling? This is truly one of the outstanding features of the Willys. Our steady readers will remember we were so enthusiastic about this point that we sounded like a sales brochure after last year's test of the Willys (May '52 MT). We went on to rate the Willys tops in this category in our annual Engineering Achievement Award (Feb. '53 MT). The car is still excellent in this respect. There is no tendency of the steering to become mushy even in tight turns. Body lean is hardly noticeable from behind the wheel or when riding in the rear seat. No



TEST OF THE '53 WILLYS



correction is required going through turns on normal road surfaces, until the rear end begins to break loose. And this only happens at excessively high speeds or on rough, choppy, or washboard surfaces. When it does, you have ample warning and can correct it quickly and easily.

Gusty cross-winds of medium intensity require steering wheel correction, one of the faults of a light car which is difficult to overcome. Steering wheel vibration is noticeable on washboard roads.

After becoming accustomed to the car and its excellent behavior, we found road speed averages could be maintained that were equal to, or above, those of more powerful cars.

Since the wheelbase is shorter, are interior dimensions proportionally smaller? For a car with a wheelbase seven inches shorter than its main competitors, interior dimensions are surprisingly good. Legroom for rear seat passengers is slightly less (2.8 inches) than the Big Three average. In all other respects, such as headroom, seat height, seat width, and front seat legroom, the Willys is equal (within a fraction of an inch) or above the average. Providing this room was probably the hardest job the engineering department had to face.

Does it have any trunk space? A short rear overhang somewhat restricts the length of the trunk compartment, but a squared-off deck lid design allows fairly

large articles to be carried close to the rear with enough clearance left to close the lid.

A six-inch vertical panel at the rear of the compartment requires more effort in loading and unloading than if the lid extended to floor level. All available space can be used, as the Willys' exterior deck lid hinges do not present the restrictions that most interior overcenter springs do. The addition of side panels would improve interior appearance, and we feel that the addition of something more substantial than a thin sheet of cardboard between the rear seat springs and the front of the trunk would be a wise safety feature.

Is the instrument panel good looking?

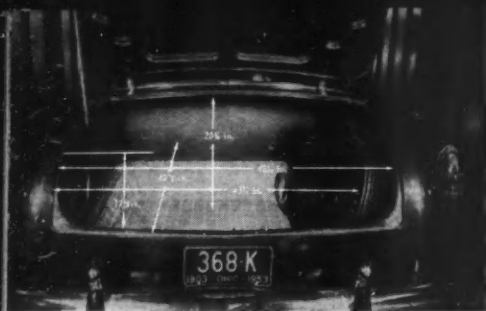
What about convenience of controls?

It's somewhat austere looking and not too functional. Instruments and controls are conveniently located, but in a distracting fashion. Instrumentation is all within the speedometer dial. Fuel and temperature gauges are in the lower section of the dial, with small red warning lights directly above these, indicating battery discharge and low oil pressure. On opposite sides at the top of the dial are the high beam and turn indicator telltale lights. One light for indication of right or left turn is illegal in some states and it is therefore surprising that some manufacturers still use this system. The key-operated starter-ignition switch is located on the extreme left side of the panel, making it awkward

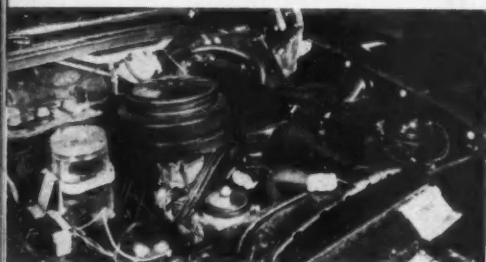
for a right-handed person—at least until you get used to it. The lighter and ashtray are located close at hand below the right hand side of the steering wheel—good for the driver, but the lighter (with the ashtray open) is inconvenient for the passenger. It takes a considerable stretch to reach the radio selector dial from the driver's seat, as the knobs are to the right of the center of the panel. The glove compartment, at the extreme right under the panel, is of the drawer type and has considerable room but a slanting bottom, making its contents slide to the front. Its sharp lower edges should be rounded off. Its position makes it inaccessible to the driver. In addition, the operation of the drawer on the test car was none too smooth, especially from the side.

How does the heat and vent system work? Four controls (placed on a panel under the dashboard) deliver fresh air, regulate the temperature of incoming heat, and operate the defrosters. The fresh-air supply, controlled by two pull-type knobs, is considered adequate in volume, and the thermostat control for heat allows more than enough warm air for cold-weather driving. However, the heat control on the MT test car did not function properly.

When the switch could be pulled out, the system worked well, but because of a faulty mechanism in the switch itself, we often had trouble putting the heater into operation.



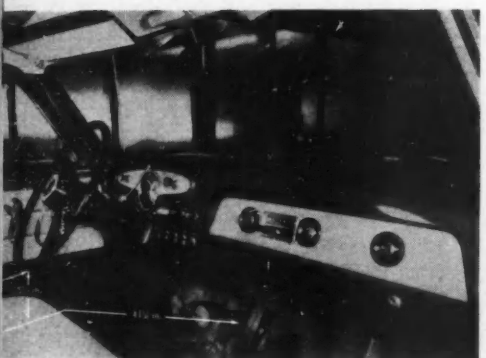
Trunk is short, but design allows lid to clear large articles when closed. The high sill lessens ease of loading and unloading



Little space is wasted under the Willys' hood. The small F-head engine is the only one of its type used in an American car



Doors of generous height and width allow unrestricted exit and entry and are provided with a stop at wide-open position



Front compartment provides adequate leg-room. The instrument panel is simple in design; radio controls are to right of center

Twenty-six

CROSS-COUNTRY ROAD TEST OF THE '53 WILLYS continued

Is the interior up to the standard of other cars in its price class? By comparison to similar cars, the Willys does show some economizing in this department. The front seat back (in four-door sedans) is a modified fold-forward type as used in two-door models, with the back locked in position. The combination fabric and plastic interiors will give good service, but are not equal in quality to some of the competition. The seam on the seatbacks, joining the plastic and fabric, is at the point of greatest wear (approximately at belt height). A seam somewhat higher would reduce chances of construction failure at this point.

It looks a lot like other cars. Is there anything different or better about the Willys body? The designers of the pleasing yet functional Willys body should be given a pat on the back for a job well done in reducing the front and rear overhang to a minimum. This results in the shortest overall length of any domestic product, a definite aid in parking as well as allowing additional room in the family garage for storage or Father's workshop. The Willys' short overhang will also help to avoid bumper rattles and tail pipe damage caused by sharp dips on driveway ramps.

Has the Willys body style changed this year? Still a youngster by production standards, Willys could hardly afford to re-tool for a major body change. However, the company did introduce a four-door sedan and a new two-door "hardtop" model to its line this year.

Great restraint is shown in the use of chrome (unusual by today's trends) and the car's appearance by no means suffers by the absence of it. The one strip extending from the front to the rear wheel cutout is placed to give maximum protection to door panels from careless door-openers in crowded parking areas.

Both front and rear doors are wide as well as high, and have a one-position stop at wide open, allowing very easy entrance or exit. The use of the integral

frame and body construction allows a considerable saving in weight and perhaps a stronger unit. Our test car's total weight of 2910 pounds was from four to six hundred pounds lower than its class average.

Is fuel economy as good as advertised?

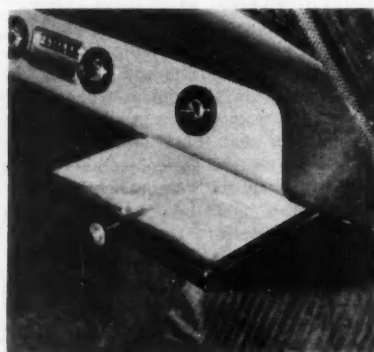
Fuel economy is well above average. An overall average of 24.4 miles per gallon was obtained on our New York-to-Los Angeles trip. This included all types of road conditions and surfaces, grades, winding roads, and traffic conditions, at speeds up to 74 mph in the open. This figure, surprisingly, is quite close to the overall average of 25.2 mpg (average of constant speed checks at 30, 45, and 60 mph in conventional and overdrive, using Mobilgas Regular) obtained in our regular road test of the car. If the majority of your driving is in the 30-50 mph range, this figure may be somewhat improved, since we obtained mileage close to the advertised 35 mpg at 30 mph in overdrive.

Is the engine powerful enough to give the car good performance in traffic and on the highway?

The Willys powerplant gives adequate performance under average driving conditions in city driving or in the wide open spaces. It has nothing that would qualify it as a drag race winner, but how many so-called acceleration "bombs" can equal this car's economy? Clocking 21.1 seconds in the standing-start, 1/4-mile run makes it slightly faster than the average for its class, although its 0-60 mph time of 20.3 seconds is a little slow compared to some cars in its price and weight range. An average top speed of 82.6 mph again makes the Willys somewhat slower than the competition, but looking at its fuel consumption figures, it far outshines other cars in its class. It's up to you to decide whether you want speed or economy in a car.

Does it have adequate brakes? Being a comparatively new car on the market, the Willys is best rated by matching its performance with other cars in its class, rather than by this car's past performance. For stopping power, the Willys rates about average. MT's test car, a four-door sedan, stopped in 191 feet 11 inches at 60 mph. No abnormal brake fade was experienced, and the Willys was superior to some other cars in its field in braking power.

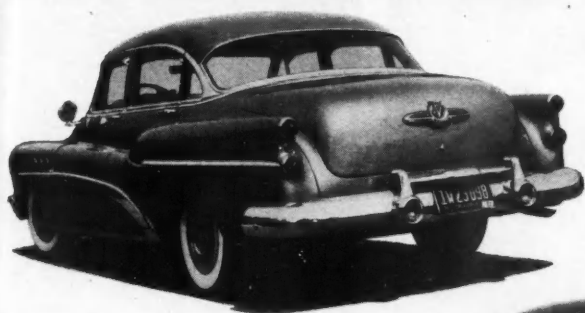
Does the Willys have an automatic transmission? Not at present, but it is possible that the Kaiser-Willys merger may divert some Hydra-Matic transmissions to the Willys. The two transmissions now provided are conventional (4.1:1 rear axle ratio) and conventional with overdrive, provided with a 4.56:1 rear axle ratio and a 3.19:1 overall overdrive ratio. **What about engine performance and durability?** The engine is of F-head design (valve-in-head intake, valve-in-block exhaust) and is a rugged, highly efficient.



The drawer-type glove compartment is at the far right. The radio speaker is provided with sounding board by windshield

AN MT RESEARCH ROAD TEST

Is Buick's 50th Year Its Best?



A newly designed V-8 power-plant ups the performance of America's fourth favorite car



Photos by Jack Campbell

THE CAR AT A GLANCE

	Peer	Avg.	Good
Acceleration			✓
Standing Start 0-60 mph			✓
Body Work			✓
Brakes			✓
Stopping Distance			✓
Avg. 30, 45, 60 mph			✓
Ease of Handling	✓		
Fuel Economy			✓
30, 45, 60 mph			✓
Interior			✓
Ride			✓
Reliability			✓
Top Speed			✓

MT RESEARCH STAFF
 Walt Woren
 Jim Potter
 Pete Malone

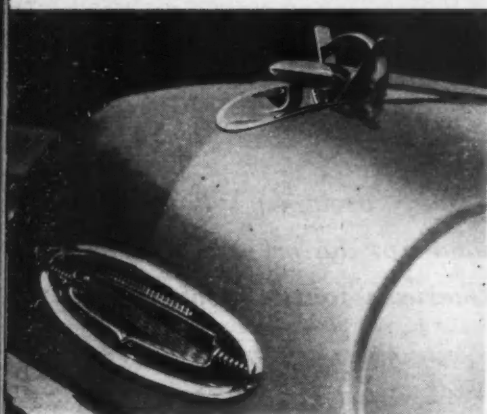
Bob Hoepner
Fred Budley
Jim Lodge

A SURPRISE PARTY was in store for Buick fans when the company unveiled its Golden Anniversary models this year. A completely revamped power program was introduced (the only real surprise), with the biggest news centering around the new overhead-valve V-8 engines.

The tested, tried, and true straight-eight was fast becoming obsolete, in terms of publicity given the new V-8s on the market, and something had to be done. The finishing touches were put on a 90-degree mill Buick engineers had under wraps, and the result was an advanced and fresh example of mass-produced V-8 design.

While testing one of Buick's best-sellers, the Model 52 Super four-door Riviera sedan, we found things that will please many lifelong Buick owners and disappoint others. Non-Buick buyers looking for a new car will find features pleasing in performance and appearance, as well as qualities lacking here that can be found on other '53 cars.

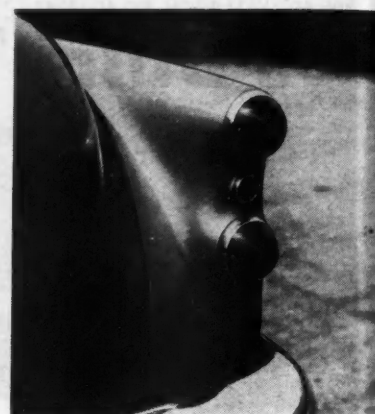
Has the new V-8 improved Buick's performance? More get-up-and-go is the most noticeable improvement in this year's Buick. Sluggishness and slow pickup, faults common to past Dynaflo-equipped Buicks, have been adequately corrected with added power and a redesigned torque-converter.



The familiar "bomb-and-ring" hood ornament is now recessed, carries "V" emblem



The Golden Anniversary Buick has adopted the headlight design used on the XP-300



Bullet-like taillights may indicate the future use of Le Sabre design features

The MT test car, equipped with the new Twin-Turbine Dynaflo (\$192 extra on Special and Super, standard on Roadmaster models), showed better gas mileage and a higher top speed than its forerunners. The 170 brake-horsepower V-8 (164 bhp with synchromesh transmission) powered the '53 Super to 104.5 mph, the fastest run during the road test.

The Buick engine differs from other V-8s by using vertical overhead valves and having the largest bore (four inches) and shortest stroke (3.2 inches) of any of the new V-8s.

In an effort to squeeze maximum efficiency from their new engine, Buick engineers have used the highest compression ratio ever employed in a production engine—8.5:1. Although much research was done on the design of the Buick's combustion chamber to permit satisfactory operation on available premium grade fuels, our test car at 5000 miles had a bad spark knock, even at part throttle under 2000 rpm. Many Buick V-8 owners report the same experience on all brands of premium grade gasolines. It has been found, however, that this annoying ping can be reduced by replacing the standard .015 head gaskets with .045 gaskets. This results in a compression ratio of about 8.0:1 and a power loss that will hardly be noticeable at normal driving speeds.

An efficient two-barrel carburetor and well-designed domed pistons give adequate performance, but with further development (especially in manifolding), more power output with lower fuel consumption should be expected in the future.

Does the '53 Buick stress riding comfort? Buick still retains soft springing, but the "riding on a cloud" sensation is missing from this year's car. A two-hour drive was tiring to our testers, and the seats, of no-sag spring construction, gave a feeling of harder riding than is usually associated with Buick's soft-traveling reputation.

Does the Buick have good roadability features? The '53 Super has good recovery from normal highway dips at low and moderate speeds, and oscillation (up-and-down movement) was hardly noticeable. However, like many soft-sprung cars, the Buick "bottomed" (traveled its entire springing distance) on very bad dips at 70 mph.

Vibration on washboard roads was not severe. Jarring was quite evident at 40 mph, but reduced at higher speeds. Road noise in the Buick is not noticeable under 65 mph, but is apparent as speed increases above that point.

Is the car easy to handle? The MT Research team found the 4300-pound Super, equipped with power steering, very easy to drive. Some drift was noticed at speeds over 50 mph on a smooth road, and we felt some side movement in the rear end of the car going over washboard roads at 25 mph.

Like many power-steering-equipped cars, the new Buick gave the impression of having no physical connection between the

steering wheel and the front wheels. An overall steering ratio of 26.0:1 allows 4.85 turns lock-to-lock. To reduce steering effort on cars without power steering, Buick has increased the steering ratio to 29.0:1, but uses 5¼ turns lock-to-lock, still too much for good control.

Steering was positive, however, and unlike some power steering units, the wheel had good return characteristics. Large, well-defined finger grips on the underside of the wheel are helpful, and with power steering and Dynaflo, the car was easy to park. **Has stopping power increased with horsepower?** A higher top speed (made possible by the Buick's new V-8), combined with the car's weight, made the 1952 braking system inadequate for this year's car. New performance means more safety as well as new life, for Buick has paced its additional power by increasing the width of the rear brake shoes from 1¾ inches to 2¼ inches. The Super stopped in 190 feet 10 inches at 60 mph, somewhat better than average for its weight.

Are interior appointments of high quality? Buick's interior is attractive, and has a lot of shiny chrome fittings, but the broadcloth upholstery is rated only fair by our upholstery expert, Dale Runyan. Cordaveen, a leather-like plastic, is used throughout the car on door panels, armrests and seat trim. A fair grade of carpet covers the rear floor only. The front compartment floor is covered with a rubber mat.

Window cranks and door handles on the '53 Super are of good quality polished chrome, but the door handles are in an awkward position for easy opening with the hand nearest the door when one is close to it.

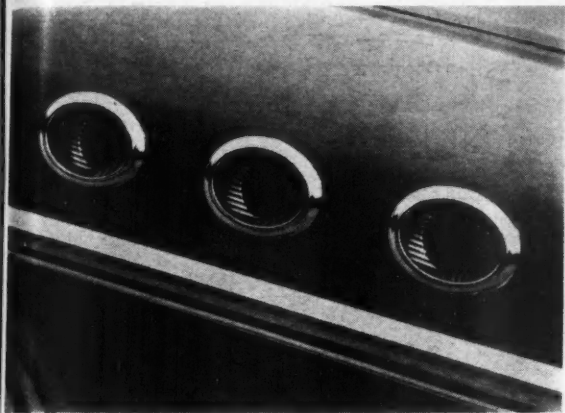
Would you and your passengers be comfortable in the Buick? While you won't sink up to your neck in sponge rubber, you may have a feeling of being too low when you're in the front seat of the new Super. This illusion is probably a result of the high hood and cowl and invisible fenders. However, the one-piece windshield, wrap-around rear window, and narrow corner posts afford excellent visibility.

The pull-down center armrest is smaller and less comfortable than those found on other cars, but rear seat passengers will find plenty of head and leg space in the roomy Super.

The most objectionable feature (to the driver) of the Buick's seating arrangement is the steering wheel-and-seat relationship: We found that the steering wheel blocked leg movement when we were applying the brakes.

Is the interior safe for the driver and passengers? Buick has wisely retained its good-sized instruments and high speedometer in front of the driver. However, this safety feature is lessened somewhat by having the instruments recessed to a point where the ammeter and fuel gauge are hard to read at a glance.

A major drawback to instrument readability is the lack of a light in the gear-position indicator. This will present a problem



An unofficial trademark, Buick's well-known fender portholes have been many shapes and sizes. They no longer ventilate

at night to anyone unfamiliar with Dynaflow. We feel that a light in the gear selector should become standard equipment on future models equipped with Dynaflow.

Plainly marked, large control knobs line up on both sides of the Buick's radio speaker, which is mounted in the center of the dash panel. This center section is heavily chromed grille-work, and lends a sparkling appearance to the front compartment. As eye-catching as this glittering panel is, it remains a poor safety feature, and a smoother surface should replace it.

Protruding knobs (eight in the center of the panel) present a hazard. Heat and vent controls, when pulled out, extend $2\frac{1}{2}$ inches toward the front seat. All these knobs, while undoubtedly handsome, should be recessed or moved to the left.

Ash trays are conveniently located for the driver (to the right of the steering wheel) and also for all passengers, but the glove compartment, which is spacious but shallow, is at the extreme right of the dashboard and not easily reached by the driver. MT favors the center compartment, handy to everyone.

By far the most noteworthy Buick detail is the pedal-type emergency brake. Truly more than a parking brake, it can be quickly applied in an emergency, and a simple, easy-to-operate knob makes it one of the easiest brakes to release.

Are body construction and finish up to par? The grille, made up of separate sections, is stamped of good quality and heavy gauge metal. Separate fenders (to keep repair costs down), front and rear, are retained on this year's Buick, and, as in the grille, workmanship and quality are good. Wheel cutouts were adequate for easy tire removal.

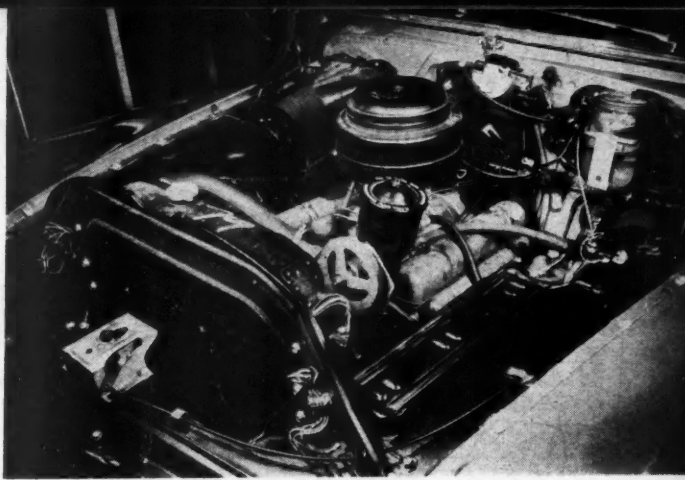
An easy-opening hood is released from inside the car, with a safety latch at the front center of the hood. By adopting the alligator-type hood, Buick has done away with the removable hood that could be opened from either side; it was a handy service feature. The rear deck, like the hood, is well balanced and braced, easy to open.

Better-than-average workmanship was found in door construction, although $\frac{1}{4}$ -inch gaps were noticeable at the top and bottom of the left rear door. The Buick's wide-opening doors allow unrestricted exit and entry, and have a one-position stop when fully opened.

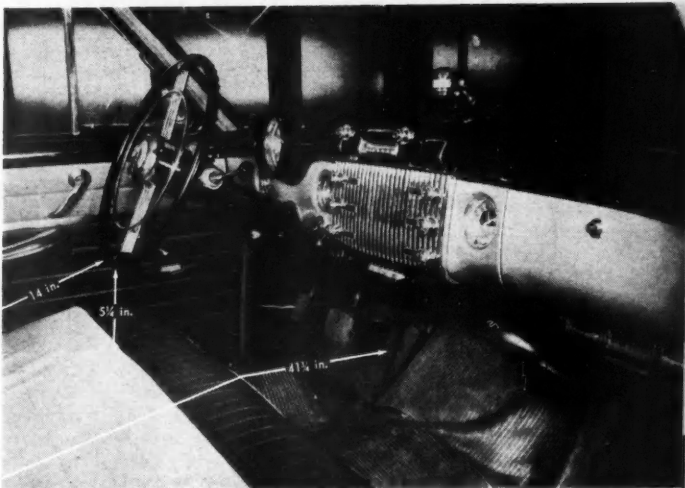
Pushbutton-type handles are provided on the outside, and the doors are equipped with safety-lock buttons on the inside. If requested, the dealer can make a quick, simple adjustment (at no expense to the owner) which will make the inside door handles inoperative when the buttons are pushed down; this is a good safety feature, especially when children are in the car.

Body workmanship was fairly good, and except for some slight gaps, body panels were well fitted. MT's test car showed signs of a good paint job. No orange peel was seen in the finish.

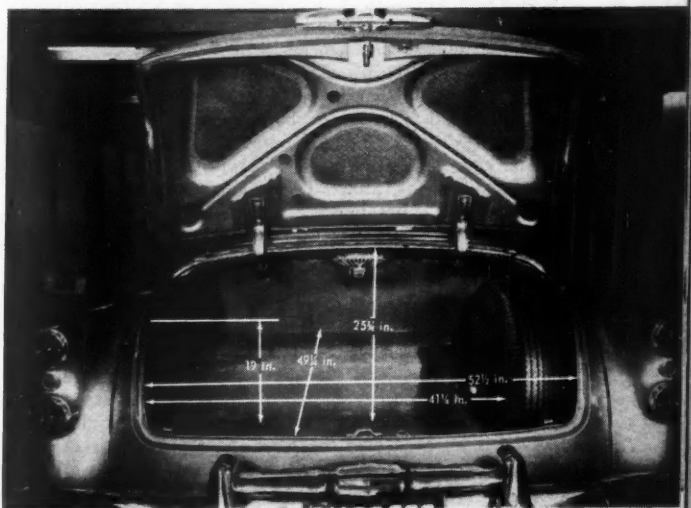
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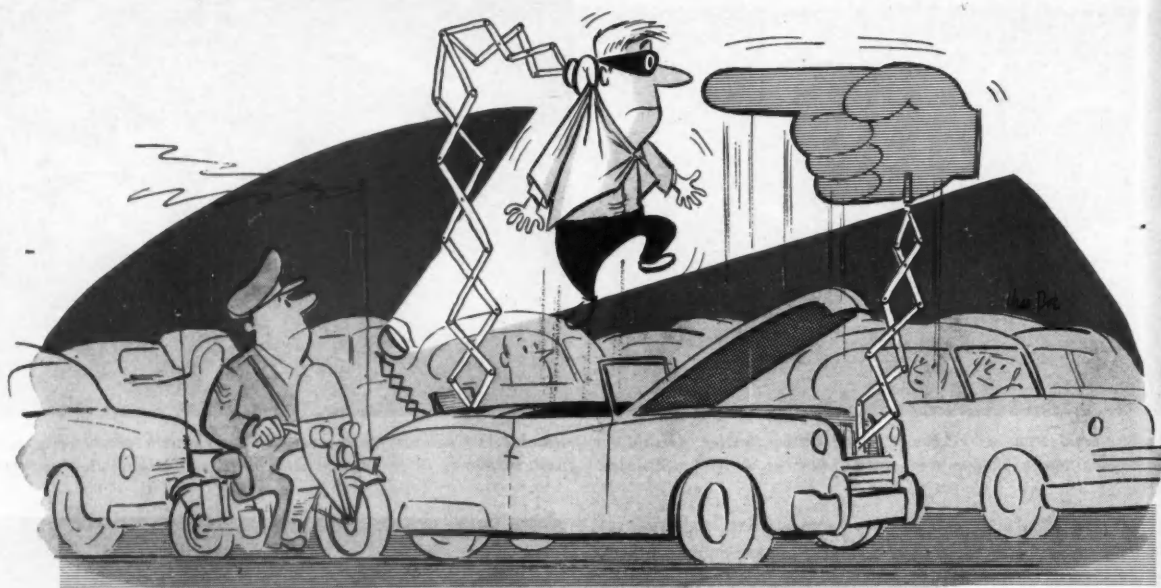
Buick's V-8 retains fair accessibility even with power steering unit installed. Note the vertical position of the valve covers



The '53 Buick's dashboard has a shining array of chrome and color. Extra-handy emergency brake pedal is at the extreme left



The wide-opening deck lid exposes more-than-adequate baggage room for family trips. Rear speaker needs protective shield



HAUNTED CARS

By Jim Earp

MAC BRAINARD, often called the "Wizard of Oz," pours his heart and soul into various elaborate burglar alarm systems, lingering lovingly over each tiny detail of a booby trap.

Perhaps the most fiendishly contrived device that Brainard ever invented is his "Multiple Whammy Special"—an electronic watchdog designed to guard a car against theft.

If anyone but the owner manages to start a car equipped with a Multiple Whammy Special, a hidden relay clicks softly, allowing the car to be driven smoothly, but only for a distance arranged in advance. The mechanism is set so the car will travel just far enough to place itself in a conspicuous position. Then everything happens at once. The brakes lock, the ignition shorts out, the horn starts blowing and the lights begin to blink steadily. This treatment will shatter any thief's faith in his honest fellow man.

Some quirk in Brainard's personality makes him delight in quiet, secret electronic devices capable of snatching the advantage of surprise from the ambusher. Perhaps his most effective (and sneakiest) gadget of all is the radio-controlled burglar alarm system that deals with the criminal who enters the back seat of a car, crouches down, and waits for the unsuspecting owner. When the driver enters his car, off balance and defenseless, he is knocked over the head and robbed. This threat is especially grave in the case of the store owner who works late and habitually carries large sums of money home at night.

If any unauthorized person enters a car that Brainard has

"bugged" electronically, a little red light begins blinking happily on the owner's desk inside the store, and a buzzer clamors for attention. It is then a simple matter for the well-warned "victim" to call the police.

Brainard also markets a reverse of that design. He can wire a house or place of business with a secret alarm system. When the driver approaches his building, he flicks a switch in his car, and if anyone has entered the building during his absence, a red light on the dashboard blinks a warning. Again, a quick call to the police, and another burglar is routed.

Mac has developed an exotic array of gadgets designed to booby-trap the criminal ambusher before he can do any damage. The principal aim of his business—the Master Electronics Company of Hollywood—is to supply the customer with marvelous electronic devices that cannot be purchased over the counter in mass-produced packages.

For instance, after a visit to Master Electronics, the motorist can approach his dark garage with considerable confidence. As he turns into his drive, he reaches for a small instrument that looks exactly like a telephone dial. He dials the figure "1" and the garage and yard are instantly illuminated by brilliant floodlights. The house lights can also be fixed to go on with the other lights. When he dials "2" the garage door unlocks itself and swings smoothly open, revealing all the mysteries of its well-illuminated interior. When "3" is dialed, the door of the kennel quietly opens, and a large, well-toothed dog (not elec-

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Fiendishly contrived devices—such as Mac Brainard's "Multiple Whammy Special"—can give your car an electronic watchdog

tronic) rushes out to greet his master or chase a hidden attacker.

But long before "Fido" appears on the scene, any prowler is sure to become completely discouraged and retire to his favorite haunt, muttering incoherently about hard times, inflation, ghosts and mechanical stool pigeons.

Although it gives the uninitiated an eerie sensation to push a button in a moving automobile and watch a garage door open as though moved by the hands of some unseen agent, the basic theories of radio control are simple.

In this type of automotive installation, the car carries a small high-frequency radio transmitter. When activated, the transmitter sends out a brief signal on a certain frequency. Since a radio wave is a form of energy, this signal can be picked up on a receiving set tuned to the same frequency and converted to electrical energy. Amplified through radio tubes to about 50 volts, this energy can generate sufficient force to throw a switch (or relay) to actuate almost any appliance. Actually, the science of wireless remote control is founded solely on the use of radio waves (used as an extension of your arm) to throw a switch.

When this principle is applied to a garage door, the radio

waves, your door could never be opened accidentally. A criminal would need a truckload of electronic equipment to discover your key "code" (tone waves and frequency) because of the complexities and number of possible combinations.

While this discussion of the application and principles of radio control may seem complicated to some of us, those who are electronically inclined will find it highly over-simplified. Brainard's science is that of complex relay linkages and diabolically ingenious automatic machinery. For example, while sitting comfortably in an automobile, the driver can turn any household appliance on or off at will. He can operate his lights, kitchen stove, radio, record player or furnace. He can open and shut doors, feed the dog, or put the cat out . . . and he can perform these operations in any order he chooses. All this is made possible by a highly complex nest of relays that operate selectively, on the principle of a dial telephone. The setup is so intricate that a short explanation is impossible.

Although Mac is only 30 years old, his fabulous variety of inventions is the result of many years of radio experience. He firmly established a local reputation as a child prodigy when, at a very tender age, he mounted a two-way, short-wave radio set of his own design on a bicycle.

It was the invention of the automobile telephone that first brought Mac national recognition. The portable unit was a regular French-type phone that fitted neatly into the glove compartment, and was linked to his home phone by a short-wave transmitter-receiver. When anyone called the house, Mac could answer from the car; or he could dial any number from the car, and toll fees would be assessed against his home phone.

Not all of Mac's electronic-automotive inventions are restricted to radio-controlled burglar alarms. He has produced a radical steering mechanism for cars equipped with automatic transmissions. The steering wheel is mounted on a movable "stick," and the entire arrangement closely resembles modern airplane controls. When the driver pulls the stick back, the car accelerates. When the wheel is pushed forward, the brakes are applied. To permit freedom when getting in or out of the car, the stick locks in the extreme forward position. Aside from putting the wheel out of the way, this automatically locks the brakes for parking.

Mac's steering wheel design has a "dead-man control" similar to the device used on locomotive throttles. The entire action is lightly spring-loaded so that the driver is always *pulling* slightly on the wheel. Should he fall asleep or become ill, the stick would drift forward, slowing the car down, and eventually braking it to a safe stop. There is no way of estimating the countless number of lives that such a feature might save.

All of the necessary controls—brake release, dimmer switch and horn button—are mounted on the steering wheel. The pedal-less car could be easily operated by a physically-handicapped driver.

All of the devices mentioned here are available for home or business use, and Mac, naturally proud of his inventions, has a great deal of faith in their operation. Presenting irrefutable proof of how good his alarm systems are, he asks, "When you consider it logically, what group is made up of the best authorities on alarm systems?" He sums up your answers by saying, "Criminals." To convince you further, he suggests, "If *they* approve of a burglar alarm, you know it's the best."

And do they approve? "Well," said Mac happily, "some of my best customers are gangsters!"

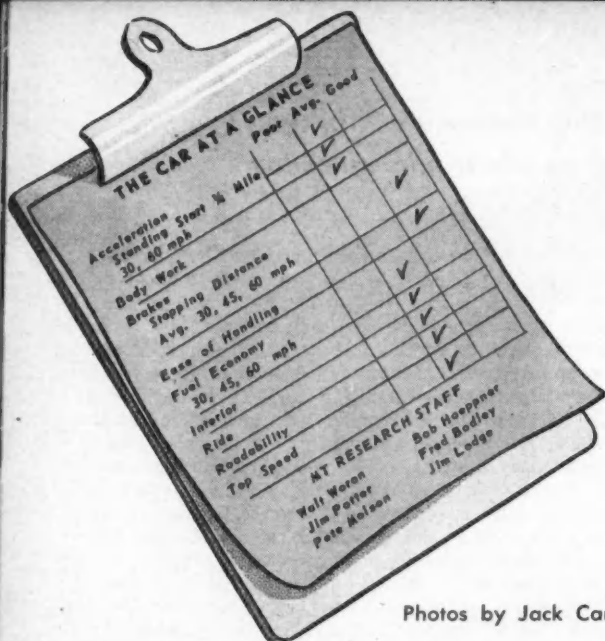


signal simply reaches out, flips a switch and starts the small electric motor that provides the muscle to lift the door.

It is still common to trigger an automatic door mechanism by means of a photo-electric, or light-sensitive, cell. Such a cell, commonly known as a "magic eye," reacts to the presence or absence of a beam of light. The use of the magic eye, though, is limited because the nature of the mechanism makes it impossible to lock the door. If some prowler does not trigger the mechanism with a flashlight and steal everything in the garage, the neighborhood pranksters will wear out the door.

The beauty of radio control is that each installation has a secret "key." Your door remains safely locked until your own personal signals activate the mechanism.

Brainard achieves this safety factor—and also guards against opening every door in the block equipped with radio controls—by superimposing two tone waves on the radio beam. Then, by varying the frequency and the tone, he can produce an almost infinite number of distinctive signals. Your neighbor's garage door might operate on the same frequency, but the tone wave would be different. Because each receiver contains resonant circuits (having the ability to respond only to pre-set frequencies) that filter out any beam not carrying the proper tone



Photos by Jack Campbell

WITHOUT CROWDING EITHER the low-price economy car class or the high-powered medium-price field, Chevrolet has spanned a wide price range by introducing three models for '53. In a bid for keeping its first place in the coming years, the company offers the One-Fifty, the Two-Ten, and Bel Air models, with two engine variations, two types of transmissions, new comfort, improved economy, and ease of operation.

The One-Fifty features "old reliable"—the standard six-cylinder engine with cast-iron pistons, poured rods, a combination of pressure and splash-type lubrication, and an output rated at 108 brake horsepower. The lowest-priced car of the three models, the One-Fifty is available with a standard (synchronesh) transmission only.

The more expensively finished models, the Two-Ten and the Bel Air series, have conventional transmission as regular equipment, but Chevrolet's Powerglide automatic transmission (with a 115 bhp engine), is available on these models at extra cost. Interior appointments and body trim vary among the three models, with the Bel Air series receiving the full treatment. "What's the difference," you probably wonder, "between the two engines?" Very little, actually. The engine used with Powerglide has the same displacement (235.5 cu. in.) as the standard engine, but boasts a 7.5:1 compression ratio compared to the 7.1:1 ratio of its running mate.

The more refined 115 bhp engine has aluminum pistons (instead of cast-iron) and a drilled crankshaft for pressure lubrication to main and connecting rod bearings (instead of pressure and splash lubrication). This engine has hydraulic valve lifters and a crankshaft that is four and one-half pounds heavier than the one in the standard engine. An automatic choke—a much-needed piece of equipment for these cold-blooded engines—is now a standard part of both powerplants.

Since you're undoubtedly in a questioning mood, the next question you might ask could be, "Did you like the improved Powerglide transmission?" We did. The room for improvement in this automatic drive has been narrowed by a larger, more efficient torque-converter and an automatic low gear for starting power. When in 'DRIVE' range, the shift from the planetary low gear is automatic, and the speed at which it takes place depends on the throttle opening up to 40 mph. At that speed, the shift is made regardless of how hard the accelerator is pressed. Initial acceleration is the same as when the manual low range was used for starting in previous models. A quick downshift to the lower gear for passing or added power on hills

Thirty-two

PERENNIAL

Long America's best girl, Chevrolet hopes to stay in that coveted spot with curvaceous new bodies, a Powerglide transmission that takes off without beating its wings, and . . . at long last . . . full-pressure lubrication

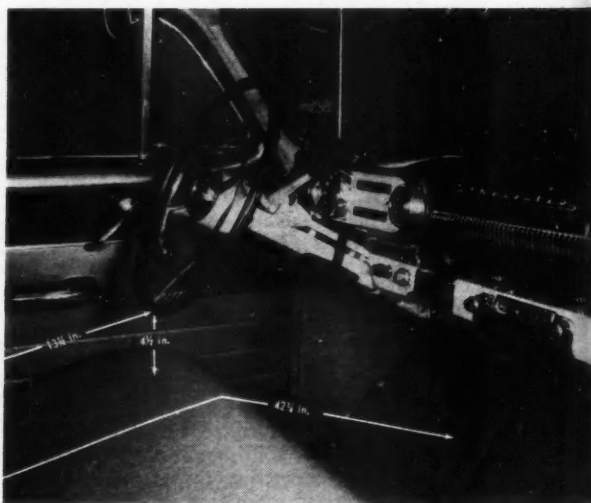
An MT Research Road Test

can be made below 40 mph by pressing on the accelerator, something we've felt this transmission has needed for a long while.

Does the Chevrolet offer anything really new in design? Advertisements beckon the buyer with "startlingly new" and "wonderfully different," but taking a realistic view, changes in this year's Chevrolet have been moderate (in keeping with GM's somewhat conservative styling trend in production cars). The alterations, however, have helped to modernize the nearly old-fashioned lines of last year's car.

Although Chevrolet uses a great deal of chrome trim, it doesn't look "over-chromed" like some cars. We feel Chevrolet deserves credit for not leaning to the use of broken fender lines, deceptive chrome strips, and pseudo fins on the rear fenders. **Have upholstery and interior finish been improved?** Yes, and except for the name Chevrolet scrawled across the dash panel in bold-faced chrome, the interior is pleasing. The finish and materials are good, and the upholstery material is of better quality than on previous models. The lower portions of the door panels are vinyl-covered (in blending colors), as are the tops of the seat backs and lower seat fronts. Rear compartment floor carpeting was ill fitting, and the rubber mat covering the front floor of our test car was adequate but not of the best material.

Are the instruments easy to read? Instrument positioning, from the standpoint of safety, has not received enough attention in the new Chevrolet. Although the instruments are well



Seat height is comfortable and legroom is adequate in the Chevrolet. Instruments (and clock) are all in front of driver

Motor Trend

L FAVORITE

grouped and easy to read, they are positioned too low to be read with a quick glance, which is as long as the eyes should be away from the road in these days of fast-moving traffic. Annoying glare is effectively eliminated by diffusing the instrument lighting through green plastic.

Until you become accustomed to the heat and vent operating devices, you may be confused at night and wonder "which does what," for the car needs lights and designations on the controls. **Does the Chevrolet have good vision?** Visibility in the '53 Chevrolet has been improved, especially to the rear, by making the rear window larger. Neither of the right fenders is visible from the driver's seat, and the rear-view mirror creates a blind spot to the right front for a driver of average or more-than-average height. The windshield post did not create any unusual blind spot for the driver.

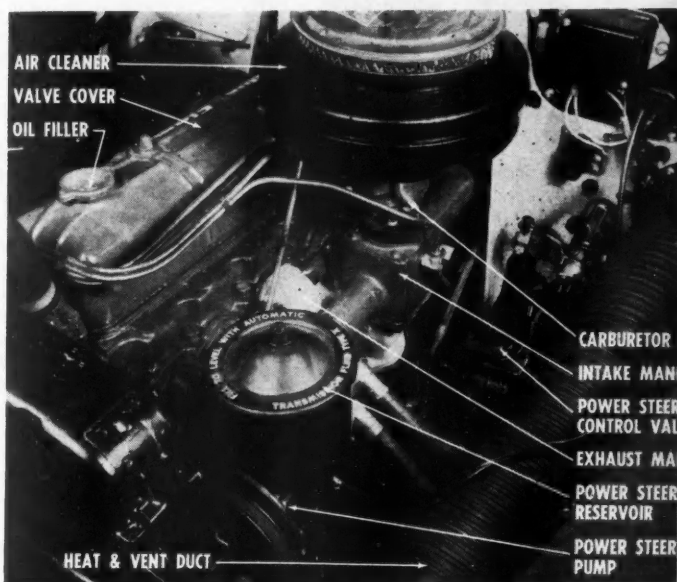
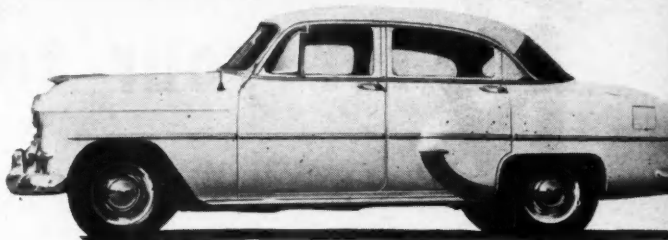
How roomy and comfortable is the '53 Chevrolet? Passengers in the new Chevrolet will find the seats comfortable and the door armrests well placed. Rear passengers have adequate leg room, and they'll find toe space under the front seat. Getting in or out of the car can be accomplished easily because of the wide doors and chair-height seats. The glove compartment is large enough for practical purposes, but it needs to move to the left to be easily accessible to the driver.

The Chevrolet has a spacious trunk, and the ease with which it can be loaded will please the person who uses the trunk a great deal. The trunk sill has been lowered nearly to floor height, making loading and unloading of heavy baggage and packages an easier job than it was in earlier models.

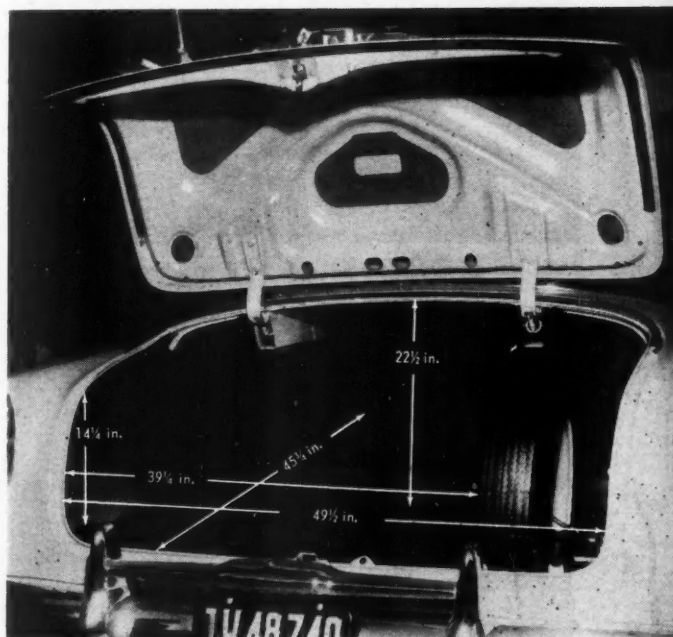
Does the Chevrolet have good riding qualities? A little easier riding than the '52 model, the new Chevrolet offers a good, well controlled ride. Rebound from sharp dips was quickly dampened, and some road noises and road shock (a little less than average on this weight car) were noticeable. On a 350-mile jaunt to San Diego, none of the passengers nor the driver complained of tiredness or discomfort, which is a tribute to the riding qualities of the Chevrolet.

What about top speed and handling? Top speed was right up there. Its 93.2 mph average top speed (four runs), a noticeable increase from '52 (80.9 mph), is due to the 9½-per cent-higher power output and possibly decreased fall-off in the horsepower

(Continued on page 70)



The 115-bhp engine has good accessibility features even with addition of power steering unit. Compression ratio is 7.5:1

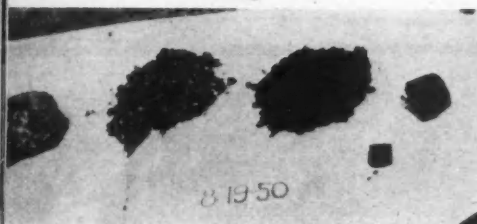


Roomy trunk is easy to load and unload because of the low sill. Level floor space is restricted by gas filler pipe, spare tire



Fender chromework is limited to a single protective strip on the Two-Ten. The large wheel cutouts allow easy tire changing

R_x for your town's sick roads!



The Reclaimix process; from broken roadway to a renewed, dollar-saving surface



This strip of highway, first broken up by the rooter, will be crushed for mixing

IF EVERY OTHER ROAD in this county falls apart, gentlemen—and I speak this way simply because of the accidents on Foothill Road—we have got to repair the 10-mile stretch north of Green Point. Not only tourists, but your own neighbors crack up there every week!”

The county road commissioners sank into a glum silence. All agreed with what their chairman had said. Likewise, all agreed with the next speaker.

“You say we have to fix that stretch, Bob. My own Linda was hurt when the school bus flew off that cursed road. But we *can't* fix it. At the most, we can spend \$200,000 on Lake County's roads this year. That won't buy a new highway for more than half of that stretch. And then think of the wrecks we'd have on the part we hadn't fixed! We'll just have to put up more SLOW signs, and hope we can afford it in four or five years.”

Now wait a minute, good citizens of Lake County (and every other county from San Diego to Androscroggin)! Maybe there is something you can do *now*.

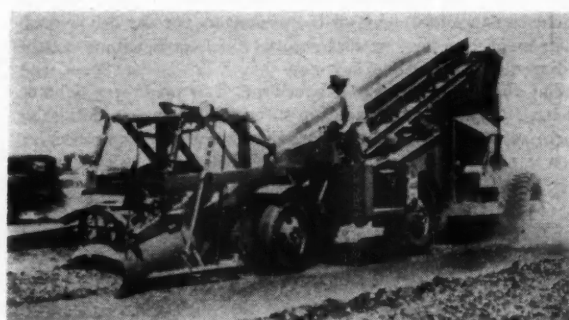
Of the three million miles of roads in

the U.S., only a little more than half are surfaced. Of the surfaced roads, 60 per cent are stone or gravel, six per cent are portland cement concrete, and 28 per cent have some form of the bituminous pavement that we customarily call black-top. The remaining six per cent includes some brick and block roadways, but the greatest proportion are compacted soil. The hard-surfaced highways, which include those paved with concrete or a bituminous surfacing, are used the most. If the sensible policy of the greatest good for the greatest number is to be followed, it will be wise if we, along with the concerned men of Lake County, direct our attention to these highways as an initial step toward highway improvement.

A very large percentage of our hard-surfaced roads are in miserable condition. Pavement edges have broken down and drivers must dodge, or drive into, chuckholes. Despite valiant efforts of highway crews, their endless patching does not correct basic designs or conditions and gives only temporary relief. Highway departments are faced with lack of funds to re-



Double-hitched behind a powerful bulldozer, a rooter and grid-roller (with a total weight of 28,000 pounds) break up pavement

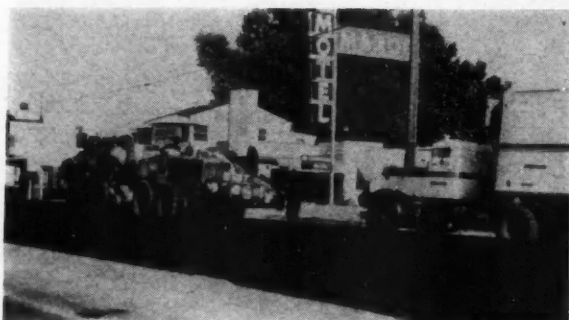


A single pass of a traveling Athey impact mill reduces materials, including oversized stones from base, to the desired size



A solvent, fed from calibrated dispenser truck, carries the softener. Note how the material behind the mixer is darkening

Thirty-four



Thoroughly mixed and given new life by the Reclaimix process, the reclaimed material will soon be ready for hard use again

Motor Trend

There aren't many short-cuts when it comes to revitalizing our roads. A new process, described in this second article on your traffic problem, might be one of those short-cuts. It might also save you a few tax dollars.

By Robert Scollay

build deficient highways and are forced to throw good money after bad in their attempt to repair pavements that just won't stay fixed.

But a new process offers possibilities for dollar-stretching in rebuilding blacktop-surfaced highways. Previously, rebuilding of these highways has been a nail-biting problem for highway engineers. They have been faced with the choice of (1) applying resurfacing over the old pavement or (2) tearing up the old pavement, hauling it away, and building an entirely new roadway with new materials. The complete rebuilding job is obviously more expensive than the cost of the original pavement. On the other hand, resurfacing over old pavement represents only a super patchwork job. Deficiencies in the base or foundation of the roadway, which probably caused the original pavement failure, remain uncorrected. This new process, known as Reclaimix, now offers highway engineers a means of renewing blacktop highways *with the original materials* and completely rebuilding the roadway at a saving of 20 to 35 per

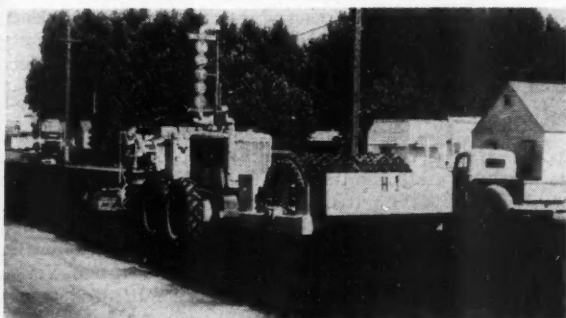
cent over old methods. Because blacktop highways represent the largest proportion of our most heavily traveled roads, this new process could mean many more miles of improved highways without an increase in construction or maintenance budgets.

Most of us give little thought to the construction details of highways except when, fuming and dust-laden, we traverse detours on our summer vacations. The Romans were highly cognizant of the importance of a good solid base for their roads; as most touring-conscious Britons or Europeans can tell you, their roads consisted—and still consist—of layers of stone which were often three feet thick. Modern knowledge of soil mechanics, however, makes extremely thick and costly bases unnecessary except in unusual cases, such as through marshes. Regardless of the type of surfacing placed on the base, it must be stable and capable of supporting the heavy loads imposed by modern traffic. Soil bases can be changed in character with stabilizing additives such as other soil mixtures, gravel, rock, calcium

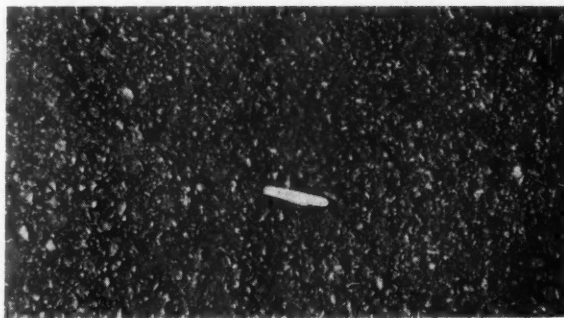
chloride, and portland cement. The trouble with many of our highways, and particularly some built many years ago, lies in a lack of base stability which is largely responsible for surface breakage. Only too often the trucking industry has been falsely blamed and maligned for wanton pavement destruction, when a moment's thought makes it apparent that roads should be designed for all traffic, both commercial and private. The trucking industry is an integral part of our national transportation system and pays its share of highway taxes. It is only common sense to demand that this money be returned in the form of all-purpose highways.

Most of our blacktop highways are surfaced with asphaltic concrete. Asphaltic concrete consists of a crushed rock or gravel aggregate which has been graded and blended for size and then mixed with a natural or petroleum asphalt binder. When spread and rolled it cures into a firm pavement, and the exposed aggregate forms a skid-resistant surface. Mixing may be done on the roadway or in a

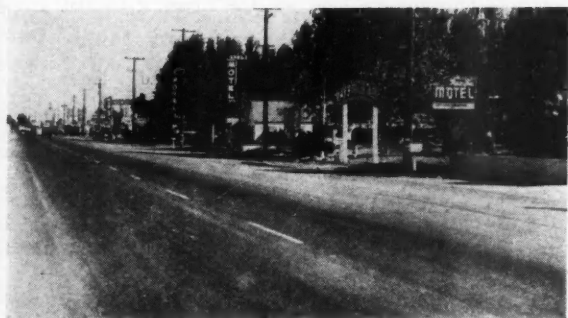
(Continued on page 56)



The surfacing mixture, now treated with Shell Oil Company's new asphalt softener, is being prepared for rolling and leveling



The texture of a reclaimed asphaltic concrete road is shown by comparison with a pocket knife. Surface is skid-resistant



This is a reclaimed highway after three years of use. Highway officials claim it holds up well under heavy and constant traffic

July 1953

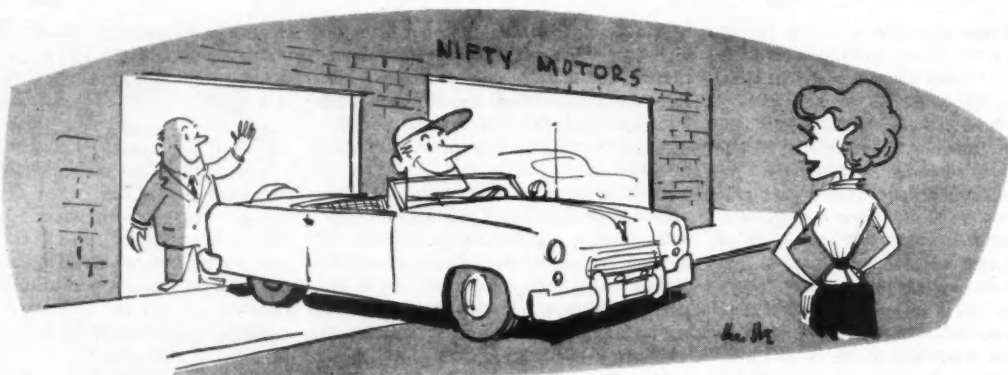


This 4000-ton stockpile of asphalt would have gone to waste in the past. Now, properly treated, it can become a new road

Thirty-five

Open cars are pretty, they're smart,
they can even act as bait. But
someday you may ask . . .

"is it wise"



By Lorenzo "Dude" James

(NOTE: "Dude" James is something of a surprise to us, too. We are told that he recently retired from the automobile business, can generally be found somewhere near Hollywood and Vine, and that he seems to shoot a straight pitch on the subject of cars. In his own words: "I worked as a 'talker' in carny for enough years to learn that Barnum was right. But he wouldn't have had to work so hard to prove his point if he'd transferred over to the car business like I did. . . ." Who is "Dude"? We don't know. He disappeared after dropping this in our laps.

—Editor)

NOW LOOK, FRIEND, are you sure you want a convertible? We all know they're classy cars: every one a super-deluxe model. Even if you don't like to ride along with the top down and enjoy the sunshine, and even if you hate fresh air, so what? When you pull up in front of the country club, red nose and all, you're more of a sportsman when the top's down than in a family sedan; and the ladies, bless them, seem to become a little more—well, *tolerant*, shall we say.

Yes, indeed, a convertible does have its advantages, but before you rush right out and buy one, you'd better sit down and figure whether you want to take the knocks that come along with your good fortune. A convertible costs more to start with, costs more to operate in the long run, and is sudden death in certain types of accidents. Now, you'll hear a lot of nonsense on all these points, but nothing that can't be cleared up by some hard facts, a sprinkling of common sense, and a little talk with a few hundred men who know the business.

The first thing to consider is the initial price on convertibles. Throughout the new car market—large cars and small—they generally run around \$400 more than the equivalent deluxe model, steel-top club coupe. In the case of the Fords, for example, at base price, delivered in Hollywood, you will pay \$2671.59 for the convertible, but the deluxe model club coupe goes for \$2231.47—a difference of about \$440.

When you hear that a convertible is actually a cheaper car to produce than the regular club coupe and that the manufacturers are all conspiring to clip you, don't you believe it. Your convertible is actually a different car throughout from the steel-top (not the "hardtop convertible") coupe or sedan. It has to be, and the reasons are obvious. A convertible frame lacks the support of the steel top and, even more important, of the side posts that give rigidity to the coupe. Naturally, that makes it

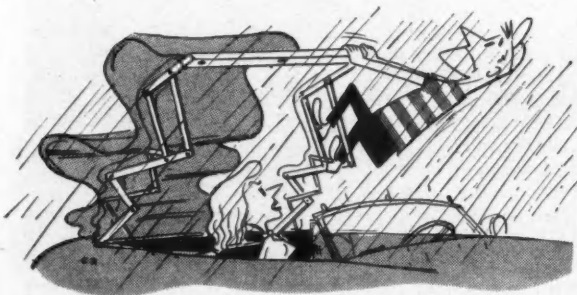
more subject to the twisting action of uneven road surfaces.

So the manufacturers have to reinforce the convertible throughout. The frame is stiffened, perhaps by the addition of X members or cross-bracing. Heavy duty bracing is thrown across the cowl and the turtleback, the quarter panel is loaded with heavy girders, and the windshield posts are generally more sturdy. Of course, the methods of reinforcement vary from one manufacturer to another, but the fact remains that convertibles are around 300 pounds heavier than club coupes of the same model—330 pounds in the new Chevrolets.

There is one point concerning all that bracing that you seldom hear about. When a convertible is clobbered broadside, it costs the owner from 10 to 20 per cent more for repairs. It costs more in labor and material, naturally, to straighten out all that extra metal.

But even with all this bracing, convertibles are not as rigid as the standard models, and over a period of time they tend to develop a great assortment of rattles. Now, there's nothing mysterious about a rattle. It just means that something has worked loose and needs to be tightened up. But when you drive into a garage and ask a mechanic to fix a rattle, he'll throw up his hands in horror and say, confidentially, "Look, Bud. You're driving a convertible. Let's face it. They rattle and there's nothing you can do about it."

That is an old, old, fairy tale. Still, you can't blame the mechanics. A rattle is easy to fix all right, but first you have to find it. Even a good mechanic may hunt around for six hours before he finds the one loose nut that's causing trouble. Then



Put the top up and down often to keep it from stiffening

Motor Trend

sto own a convertible?"

suppose he only charges two dollars an hour for his labor. That's 12 bucks even. Are you going to be happy to pay it? You are not! "Twelve dollars just to tighten a lousy nut!" you'll scream. And chances are he didn't find the one rattle that bothered you most. He looked for the one that annoyed *him*.

If you do buy a convertible, then, remember that it's going to develop rattles—not only in the top braces, but all through the frame and body mountings—and be prepared to spend some extra time if you do the work yourself, or money if you send your car to a garage. Rattles should not be ignored. They may be fairly harmless, but then again, they may warn you that your radio, for example, has worked loose and is shaking its tender and expensive little self to pieces.

When you start to talk about spending money on a car, the convertible top naturally enters the discussion. The average life of a top seems to be about two years. The chances are that it may last as long as four years in a moderate climate before it actually starts to leak, but by the end of two years a top usually begins to check and shrink and generally looks so moth-eaten that you can't stand it any longer.

There are a few things that you can do to increase the life of your top if you want to spend the time. Dale Runyan, MOTOR TREND's interiors expert, points out (MOTOR TREND, December

order to hold to one standard for comparison, I asked for the same material as is furnished by the factory. The price ranged from \$70 at one agency up to \$90 at another; a difference of \$20.

When I put on my Harvard accent and called the Cadillac agencies, it was even more fun. The price quoted at one agency was \$120; but another outfit wanted \$225 for the same job. Both Cadillac agencies swore up and down that they used only material of factory quality.

Well, what can you say about a situation like that? Just be sure to shop around, friend, shop around. And when you finally get the local price situation straightened out in your mind, trot down personally and feel that material. For a chance to save \$105, I can go to a little extra trouble. How about you?

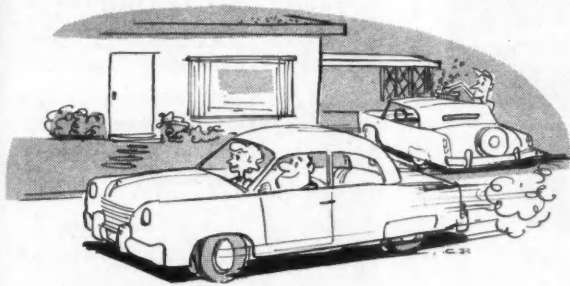
Unfortunately, no one has yet seen fit to compile and publish reliable statistics on the comparative danger involved in driving a convertible. But try to convince veteran state highway patrolmen that a convertible isn't sheer death in a roll-over! (It is also significant that the Crash Injury Research Project of Cornell University recommends that a roll-over bar of the type used by racing drivers be included in the design of every automobile.)

Drivers who are interested in personal safety may also notice that these new hardtop convertibles are not nearly as sturdy as they look. In the attempt to add flash to the car's appearance and to improve visibility, the designers have done away with the side posts. In a roll-over, that unsupported steel top offers only a little more protection than a canvas one. Many a dealer will pat those emaciated little top supports lovingly and tell you that the car is at least as strong as a club coupe; but then, he has to eat too. Just forgive him like a good neighbor and check your facts at the wrecking yards.

The discomforts of a convertible can almost be disregarded in these modern times. If your top is in good condition, the efficient heaters on the market today can keep your car fairly warm in anything but the most violent blizzards.

But the arguments pro and con can go on forever. The man who wants to drive a "sporty" model will buy a convertible regardless of the inconveniences involved; and the pleasures of a convertible are those of fresh air, sunshine, and the open spaces.

When you get right down to it, no one can deny that for reliable transportation, economy, comfort, and safety, you just can't beat the plain old family sedan or club coupe. But if you'll excuse me, I'm afraid I will have to cut this short. It's starting to rain and I have to run out and put my top up!



While the cat washes, the mouse runs away

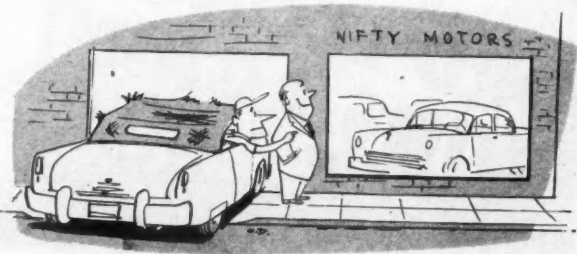
1951) that the main causes of top wear are the acid smoke of industrial areas and just plain dirt which acts as an abrasive within the top fibers. The only way to beat this is to wash the top frequently with a fairly soft brush and soapy water. A detergent, by the way, should *never* be used on a top fabric unless it is specifically recommended by the manufacturer.

If you leave a top down all the time, moisture will collect under the boot and the top will mildew. In addition, the vibration of the car in motion will rub the folded material against itself and cause abrasion, especially when the top is dirty.

But if you leave the top *up* all the time, Runyan explains, then it stiffens, loses its flexibility, and begins to check.

The sensible thing, then, seems to be to keep the top clean at all times and never put it down when it's wet. Put the top up often enough to keep it dry; and put it up and down enough to prevent it from stiffening.

Before you decide this is all too complicated to be worth the effort, let's look at the price of a new top. Just to keep myself honest, I put on my best "straight-off-the-farm" accent, called three Ford agencies, and asked how much it would cost me to re-cover the top and pads of a 1951 Ford convertible. In



... So moth-eaten that you can't stand it any longer

WINNER!

LINCOLN AGAIN SWEEPS ITS CLASS

Lincoln is a three time winner of the Mobilgas Economy Run. Fresh from its spectacular Road Race—in which it won in the second great pace... a sensational chassis ball-joint from power seat adjustment now completely

DODGE TOPS A

Wins Class C Award in Mobilgas Economy Run

Beating every other on a dollar



THE STUDEBAKER CHAMPION

Made the 1206 mile trip from Los Angeles, California to San Valley, Idaho

FOR ONLY \$13.44 worth of gasoline!

28.2

J wins Mobilgas Economy Run!



In the 1953 Mobilgas Economy Run

STUDEBAKER COMMANDER V-8 WITH OVERDRIVE

finished 1ST in

MOBILGAS ECONOMY RUN FLASH!

FORD ECONOMY WINS AGAIN!

Economy Winner 4 Years in a Row!

America's Economy Classic

Economy is yours — if you want it.

By Walt Woron
and
Bob Scollay

THE 1953 MOBILGAS ECONOMY RUN, like the nine preceding similar contests, was not staged for fun, fame, and a fat purse for the winning driver. The rewards consisted of well deserved publicity for the sponsoring General Petroleum Corporation and the opportunity for most of the entrants to brag about the economical operation of their cars.

This is indeed a happy, even if somewhat confusing, contest. Eight of the 26 entries can lay claim to being the best in their class—a juicy piece of advertising for the next 12 months. Nor are the non-winners left out in the cold. In some cases they have disregarded the ton-mile formula and pointed out that they actually got better mileage than the winner of their class. (Ton miles are determined by the product of car weight

PREPARATION



REAL IMPOUND 10am TUE. MARCH 29 1955

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17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100

Economy Run rules specified that entries must be six-passenger, four-door sedans like these at the impound garage. A special class was set up for two-door entries

The chart shown at left was used to record the pre-contest break-in mileage for each car. The entries, chosen at random by AAA officials, could be driven only 2500 miles

and fuel consumed, divided by distance.)

It is hinted in the post-contest advertising that you can duplicate the performance of the winners if you drive their product. This is essentially true — you can! Don't, however, run screaming to your dealer because you get 10 miles less per gallon. Let's first take a look at what you would face had you entered your car in this highly professional contest.

To begin with, as a contestant, you would need an exact duplicate of your

car for testing and practice purposes. These test cars were virtually mobile laboratories set up to study gas consumption at various speeds and under different terrain and climate conditions. Many were driven 8000 to 12,000 miles before the run began. Data gathered on these test runs were used as a guide for driving techniques on the actual run and for tuning the car which was used.

Every car in the run was a strictly stock automobile. Many adjustments were made in tuning these cars; how-



Above. Clipboards at the impound garage contained reports of all tuning adjustments made to each car. The reports were open to all the contestants and officials

Below left. Wally Zierer of Chrysler and fellow technicians check the performance of an overdrive governor with one of the many test machines available to entrants

Below. Driver Danny Eames is installing an overdrive governor that fits both his and factory specifications. Every part used had to be okayed by AAA officials





Here, a driver and technician team up to get the best results from their know-how. Duplicates of the entry cars were turned into mobile gas-saving laboratories



The size of this manifold vacuum gauge indicates its importance to the driver. It shows the best throttle opening under various conditions and warns of gas waste



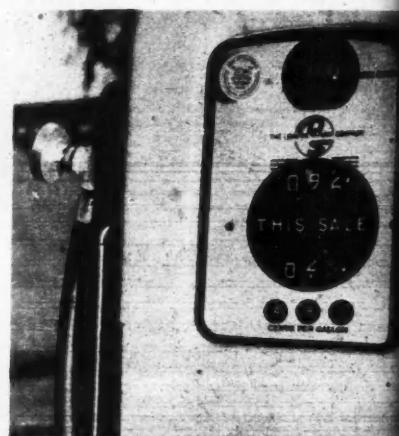
Because of temperature changes, gasoline contracts or expands in the tank. AAA's Boyd Stoutsenberger checks a thermocouple, used to measure temperatures



Kits carried by observers riding in each car included everything but fishing gear. A high average speed of 44.7 mph left no time for anything as relaxing as fishing



George Connor and Chad Johnson use one of the official dipsticks provided for each car for accurate measurement of gas tank capacity. Car has been leveled with jacks



To divide the gallon into many parts (for accurate readings), gas pumps were set at a high price. The cars were then filled on a price basis, rather than by gallons



Muscle-power was substituted for gasoline between the garage and the starting line

Forty

ever, the rules specified that all adjustments and changes must fall within factory specifications and tolerances. The supercritical tuning of these cars for the sole purpose of obtaining economy was carried to the nth degree. One manufacturer's representative sorted through 200 overdrive governors to obtain one that could cut in at exactly the point he had determined to be ideal.

Under the watchful eye of AAA officials, hundreds of tuning adjustments were made to find the optimum combinations for best economy. Your favorite service garage, if exceptionally well equipped, could perform a similar service but the bill for their ministrations would probably put a big dent in your pocketbook.

You would probably learn a lot about

gas-saving driving techniques had you participated in the run, but it is doubtful if you would follow all of them in your average daily driving. One trick, employed by all drivers, will save gas but is not productive of good overall car economy. This practice consists of getting the car in motion as soon as the engine starts. These cold starts, made before the engine oil is warm and circulated throughout the engine, can produce expensive wear and tear. Other extreme efforts to aid gas mileage, such as obtaining wind velocity and direction data during the run, are obviously applicable only to a contest and not daily driving.

Free-wheeling down hills in a car equipped with overdrive is possible if the accelerator is released below the

Motor Trend

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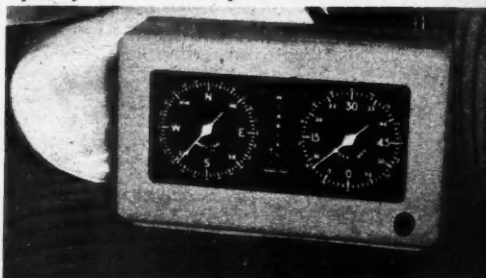
FLOWER ST.
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1953

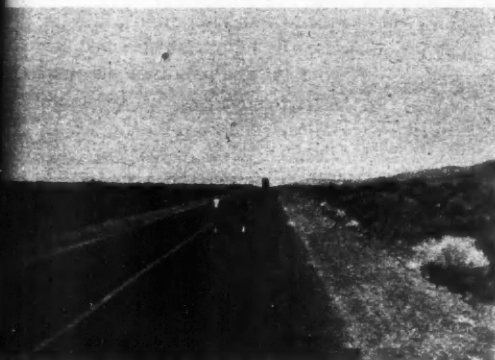
The starting point; a very busy intersection in downtown Los Angeles on April 20



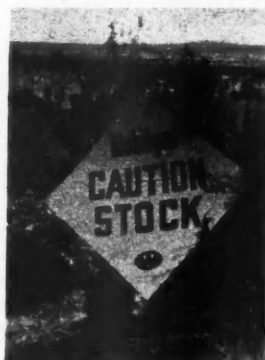
Wind data were relayed to drivers (track-style) by Lincoln-Mercury's technical crew



Dials on wind gauge indicate direction of the wind and velocity in miles per hour



Although only a calf to the cameraman, four-footed roadblocks like this took on the appearance of "gas hogs" to the economy-minded drivers in the Mobilgas Economy Run



Traffic congestion, like this in Reno, used up many precious drops of gasoline

cut-in point when cresting a hill. Until the driver nudges the throttle, the car is actually coasting. Naturally this saves gasoline, but it is not particularly safe and results in excessive wear on brake linings. This practice, however, was freely indulged in by the contestants. Other extreme techniques involved the discomfort of driving with all windows closed to reduce wind resistance and avoiding use of heaters and radios to keep the electrical load on the generator to a minimum.

While you may never compete in a Mobilgas Economy Run, some pages from the notebooks of contestants could be valuable to you. Basically these gas-saving techniques involve keeping your car in good repair, properly tuned, and properly lubricated. Sensible, smooth driving and the correction of any gas-wasting habits will not only save you

money at the fuel pump but will also help in avoiding expensive repair bills. Reduced overall operating costs are the true measure of economy.

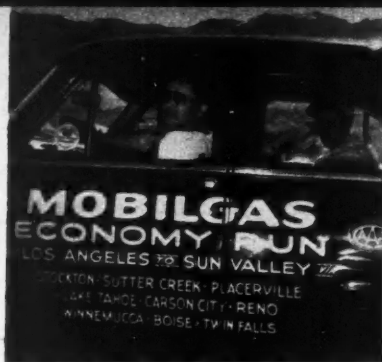
In case you haven't been reading the papers, here (condensed from our June issue) are the winners: **Low price (overdrive):** Ford Six, 56.70 ton mpg, 27.03 mpg; (automatic drive): Hudson Jet, 42.46 tmpg, 22.06 mpg; **Low medium (overdrive):** Dodge V-8, 52.86 tmpg, 23.42 mpg; (automatic): Studebaker Land Cruiser, 49.35 tmpg, 22.89 mpg; **Upper medium (overdrive):** Nash Ambassador, 51.31 tmpg, 22.55 mpg; (automatic): Nash Ambassador, 48.90 tmpg, 21.12 mpg; **High price (automatic):** Lincoln, 52.35 tmpg, 19.94 mpg; **Special lightweight class,** Henry J Four, 48.58 tmpg, 28.26 mpg.

Right, MT Editor Wals Woron observes technique used by drivers on a downgrade





Condensation shows how crews kept windows closed to streamline cars, save gas



Sweepstakes winner Les Viland averaged 56.7 ton-miles (27.03 mpg) in a Ford Six



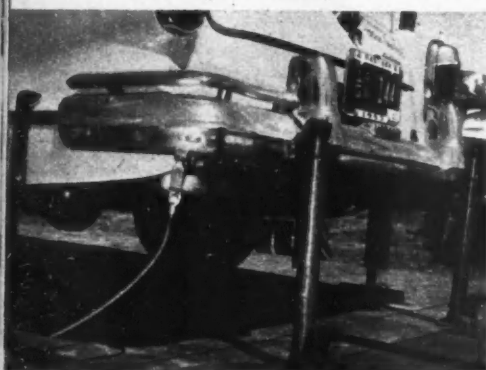
School children along the route were excused from classes to witness the event



The AAA timing and scoring machine used at Reno, Boise, Sun Valley check points



The end of the 1206.1-mile Economy Run. The first car over the finish line at scenic Sun Valley, a Hudson Jet, coasts to the impound area for its last check



Back on the leveling jacks at the end of the run, a car awaits its final filling
Forty-two

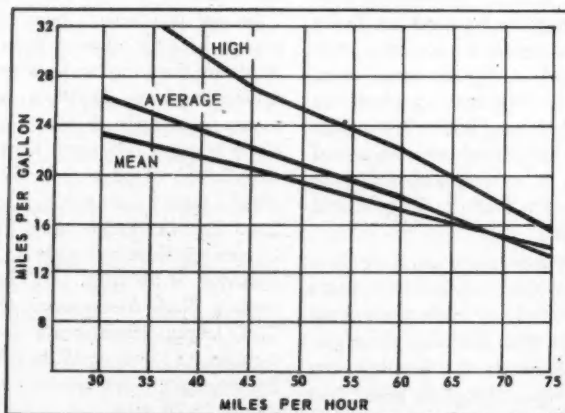
SOME TIPS FROM THE EXPERTS

For you

1. Learn to drive smoothly, keeping a steady foot on the accelerator.
2. Anticipate stops and adjust speed to take advantage of green lights.
3. Get into high gear as quickly and smoothly as possible.
4. Avoid "jackrabbit" starts. Start slowly, but avoid engine lugging.
5. Don't let the engine strain on hills.
6. Use the choke as little as possible. Keep automatic choke properly set.
7. Take curves slowly to avoid spilling gas from the carburetor.
8. Try to learn the "feel" of your car. Travel at the speed where your car feels "free," if it is within the safe and practical range.

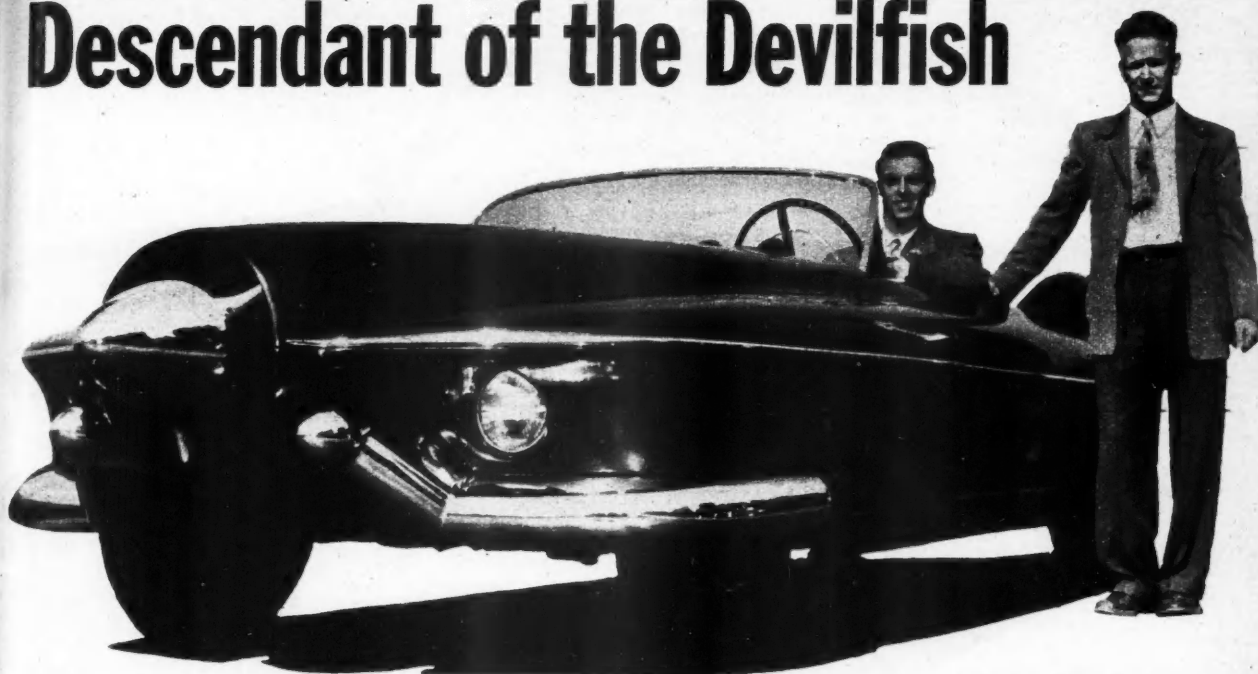
... and your car

1. Be sure the wheels are properly aligned and balanced.
2. Inflate your tires to their recommended pressure and check frequently.
3. Use the lubricants specified for your car and season of the year.
4. Adjust carburetor for maximum mileage and keep the air cleaner clean.
5. Adjust tappets (if possible) to factory-recommended tolerances.
6. Set ignition advance for maximum economy with type of fuel used.
7. Check spark plugs and breaker points for proper gap and condition.
8. Check coil and condenser for efficiency, and wiring for defects.
9. Keep entire car in good repair.



Here's how all '53 cars tested in MT's gas mileage tests have done to date. Top car so far this year: Willys (see page 24)

Descendant of the Devilfish



By Jim Lodge

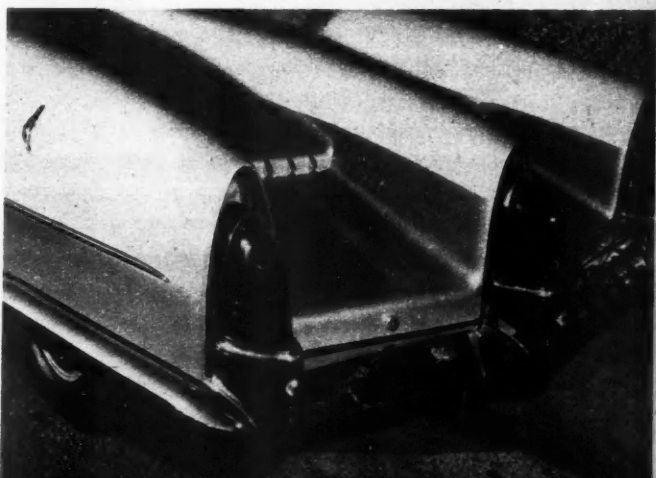
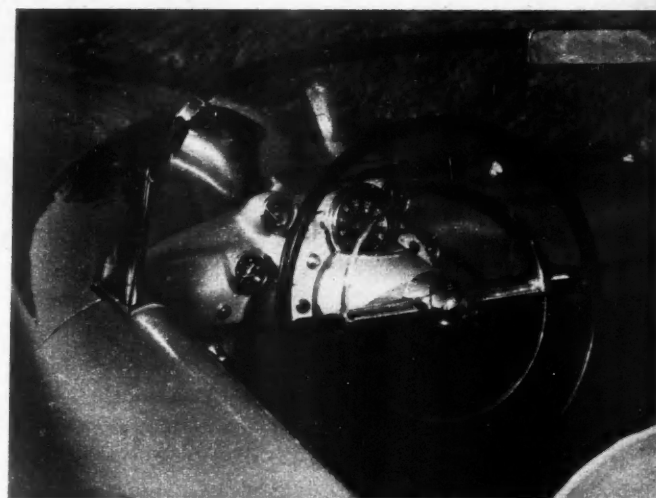
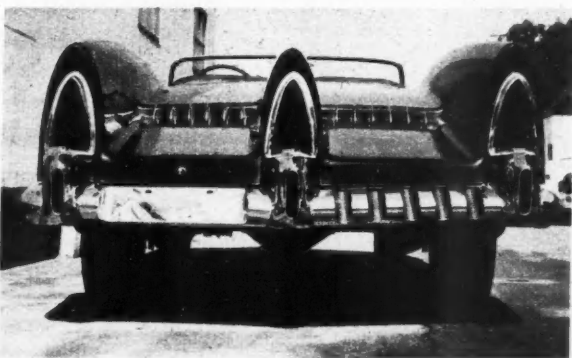
THE NAME'S the same, but the Manta Ray custom replaces sting with style. The dictionary describes the ray as having a flattened body with one or more dorsal spines. According to that description, the Manta Ray Custom was well named by its builders, Glen Hire and Vernon Antoine, both of Whittier, Calif.

The Fiberglas-reinforced plastic body, built on a modified Studebaker chassis, is powered by a stock '51 Stude V-8 engine. Although the rear springs have been slightly altered, the chassis is otherwise stock Studebaker.

The 1800-pound custom, which in some ways resembles GM's experimental cars, stands 40 inches high and has a 112-inch wheelbase. Its body is molded in 14 sections.

Stewart-Warner instruments and a Plymouth speedometer, grouped around a cone-shaped steering wheel housing, are mounted on the dashboard in individual nacelles. The car has no rear reck lid, but the seats tilt forward for storage.

The 4200 hours of work that went into this car have paid off, for Hire and Antoine are now planning production schedules, and their garage-workshop will soon be a landlocked breeding place for these four-wheeled denizens of the deep.





Deep maroon accents low-slung beauty of the Mopar Henry J. Note Dodge grille. Although it has been dropped three inches, the car still has practical road clearance.



Four-door

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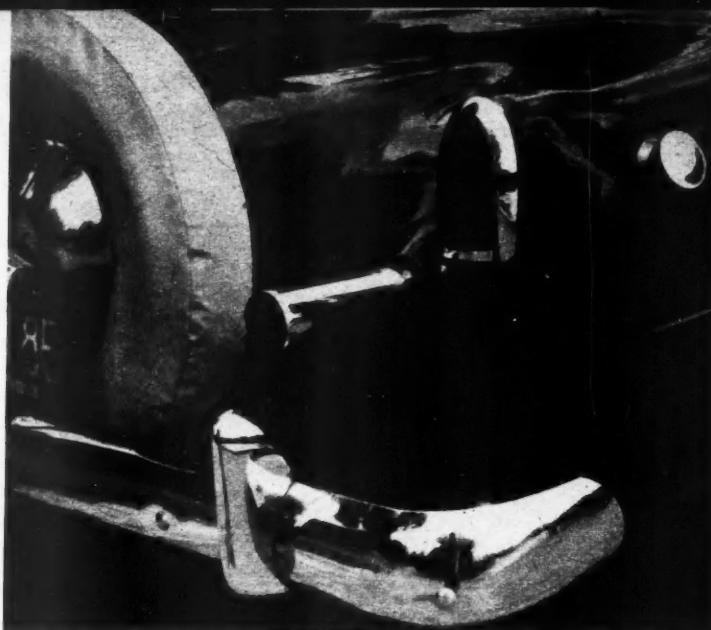
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*A b
July*

ONE FOR THE MONEY

A Photo Story By Bill Harkins



Massive exhaust pipe extensions protrude from the original Henry J taillight holes. The fin-tip lights are '51 Kaiser

ONE OF OUR cover cars this month, the Maki Custom Henry J, was built with a purpose—to win prizes. Bruno and Reino Maki, owners of Custom Auto Body and Sales in Fitchburg, Mass., completed the car for a Boston auto show, and after much dropping, chopping, adding, padding, and 500 man-hours, they came up with a pure thoroughbred. Their far-from-stock Henry J brought home first, second, and third place wins from three major Eastern auto shows.

The chassis was beefed up with reinforced rails and the body dropped three inches with lowering blocks and reworked springs. Columbia shocks were added to improve suspension.

The hood was lowered, doors angled, and window slots leaded in. A '49 Ford contributed to the rear deck, and Ford

bumpers and bumper guards were added. The brothers Maki then installed a '49 Dodge windshield, a '50 Dodge grille centerpiece, '34 DeSoto windwings, and '51 Kaiser taillights.

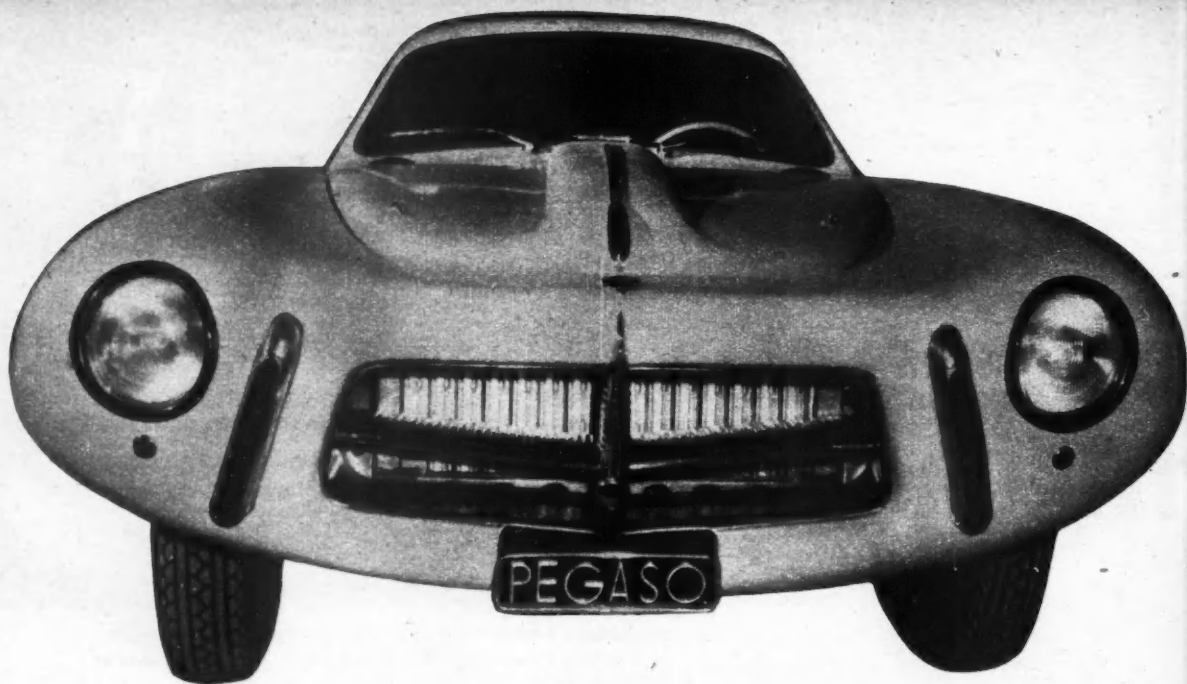
The padded top and custom upholstery came from their own shop. A lowered steering column and sponge-rubber-padded dash completed interior changes.

The stock Henry J engine was given a boost by milling the head .040 inch; then dual exhaust pipes were extended through the original taillight holes.

A continental spare tire mount was added, and the job readied for the show with 24 coats of Oxford maroon metallic lacquer. The Maki custom was bred as a show car, and right from the start it lived up to its heritage.

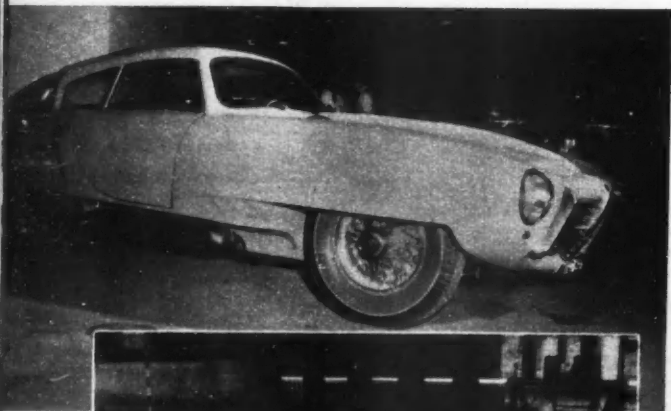


A blue-ribbon car throughout, the Maki Henry J has beautifully tailored custom upholstery and a sponge-rubber-padded dash



Pegaso

20th CENTURY CONQUISTADOR



Design of Barcelona coupe (top) differs sharply from that of Superleggera. Note the roadster's graceful windshield line

Forty-six

IT'S DIFFERENT. Pages of flowery adjectives (including words like unique, stimulating, terrific, and unusual) have been used to describe the Pegaso, Spain's answer to the Ferrari and the Mercedes-Benz; but *different*, a word covering nearly everyone's taste, applies to the Pegaso in nearly every respect.

This Spanish threat to sports car supremacy features a body design that would normally be found only on a manufacturer's prototype, or on some designer's own dream car. The only American counterpart to the Pegaso's supercharged, quadruple-overhead camshaft V-8 would be found on cars running at Indianapolis.

This 280-bhp showboat's inflated fender line is matched only by the car's price tag. The Pegaso can be brought across the waters and parked in your garage for \$29,500, or the next nearest row of round numbers. If the Pegaso appeals to you and your bank book, you'll be getting much for your money.

Following one of the few road demonstrations to be given in this country, MOTOR TREND's East Coast representative, Bill Harkins, gave a thrill-by-thrill account of the Pegaso in action. The Eastern highways and byways were treated to a rare sight as \$77,000 worth of equipment got under way. The convoy consisted of a Saoutchik-bodied coupe, a two-seater Touring Superleggera (super light) convertible, and the supercharged factory model, the "Barcelona" coupe.

Riding in the Saoutchik Pegaso at a legal speed limit, Bill's first surprise came when the blown factory job breezed by

A PHOTO STORY BY BILL HARKINS

Motor Trend

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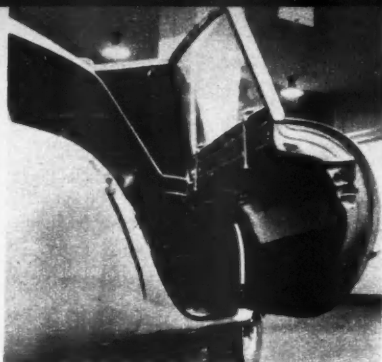
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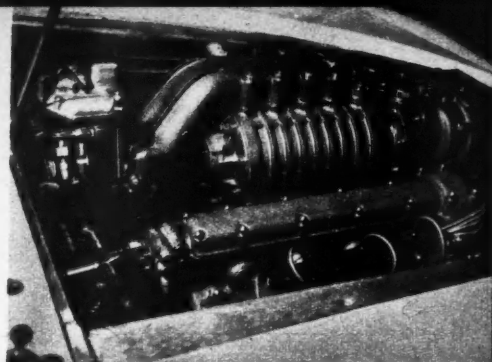
July



Plexiglas "bubble" (shown partly raised) conceals the spare tire and a tool kit



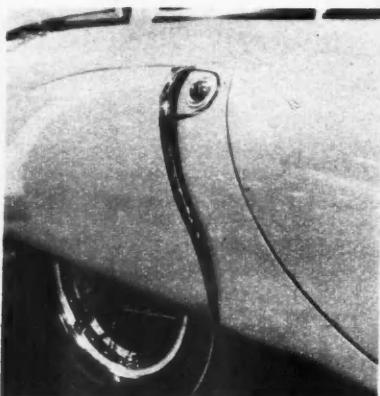
An open door provides a cross-sectional view of the Pegaso's bulging fender line



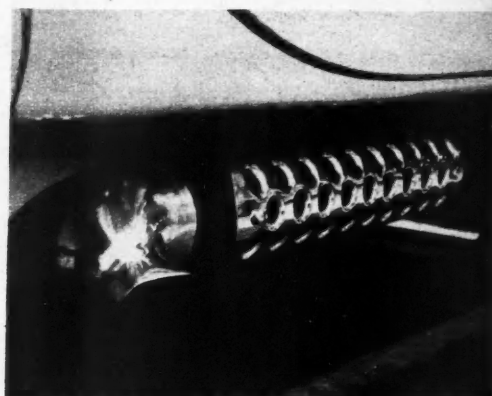
The Pegaso's hood tilts forward to expose a large blower atop the overhead-cam V-8



Built-in traveling cases fit under dash panel. Instruments have anti-glare hood



Seen from various angles, curved chrome strip assumes the shape of each body line



Dual wide-outlet mufflers are mounted below the doors. Chrome plate diffuses heat

"like a jet." Later, at a coffee shop, he questioned the driver of the Barcelona coupe, and learned that when the Spanish bomb went by it was just hitting 95 mph, "but of course it was only in third gear at the time." The Pegaso has five forward speeds.

While cruising down the New York parkways, MT's East Coast reporter was given an explanation of the Pegaso's amazing gear box. The driver, believing that gear action is louder than words, literally rammed the slender gearshift lever from fifth gear into fourth, at speeds between 70 and 90 mph. As impressive as this is, it's possible to do this with other cars, if you have the required skill. Then came the startling discovery that this could be done at *any time* in the high speed range *without using the clutch*. There's no trick to shifting gears in the Pegaso—you simply use brute force.

Although the Saoutchik-bodied Pegaso had the most graceful lines of the three cars, Bill found that the Touring Suprleggera was the roomiest and easiest-riding Pegaso. His impression of the supercharged Barcelona speedster was entirely favorable, as far as performance was concerned, but he noticed that the plexiglas rear section caused bothersome distortion.

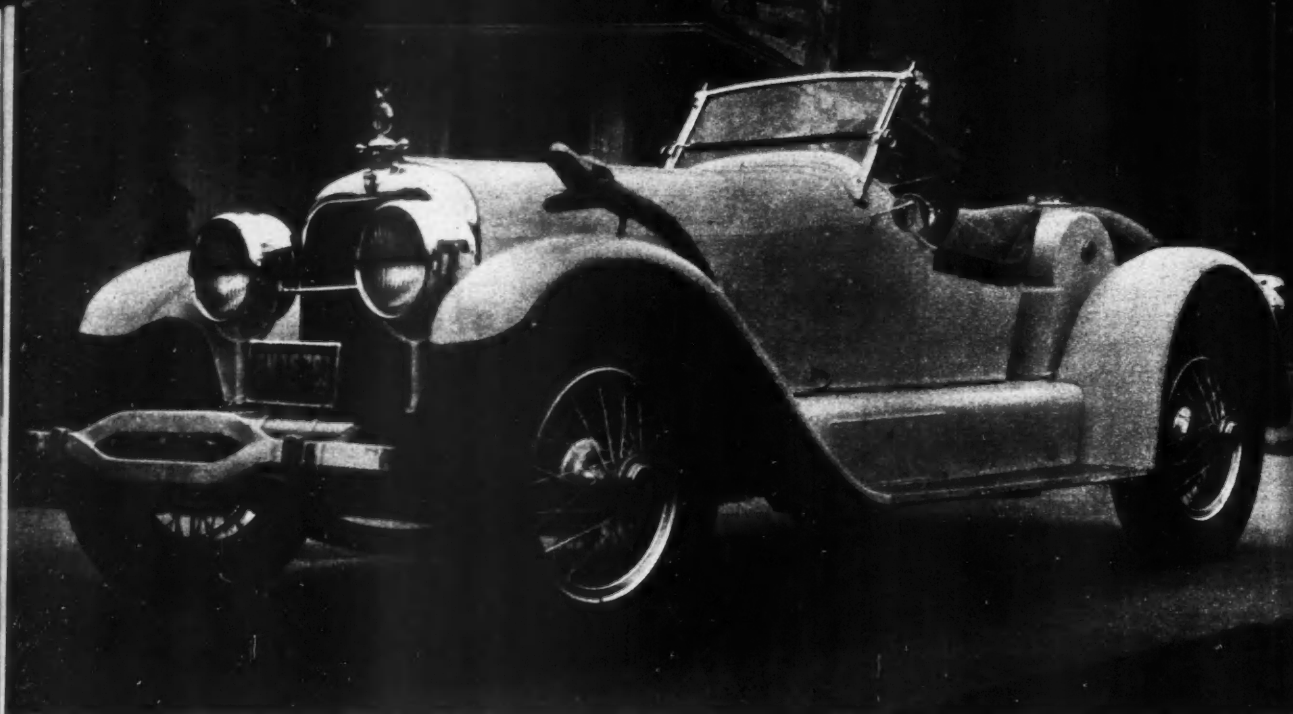
Rolling down the back roads of Oyster Bay, Bill Harkins watched the rear wheels of the Pegaso roadster in front of him angle outward over bumps as the deDion rear axle flexed. He reminisced about the old days of sports cars on Long Island, and began to wonder: here he was, riding in a car with a famous heritage—the name of Hispano Suiza, the engineering of Wilfredo Ricart of Alfa Romeo fame, and the styling

of French and Italian designers. What does the future hold for the Pegaso? Time will tell.

Good riding qualities and excellent high-speed handling characteristics indicate that the Pegaso may offer serious competition to some of the biggest names in road racing. Mechanically, it incorporates features found only on the finest track and road cars. Built on a firm, tubular chassis, it uses a deDion rear axle setup, with inboard-mounted rear brakes straddling the combination differential-transmission housing. Believed capable of cruising near 125 mph, the Pegaso has a powerful roar that is only slightly subdued by twin straight-type mufflers placed along the body just below the doors.

The Pegaso's chromework, used sparingly, is somewhat inspiring. On the side panels, a strip of chrome, seen from one angle, appears to follow the graceful line of the door, gradually blending into the roundness of the rear wheel. From another angle, the same chrome strip seems to be only an oblique bar, accenting the slant of the rear windows. Another successful guise is created in the frontal treatment. A simple-but-clever grille design and slanting bumper bars further magnify the upswept appearance of the front end.

Perhaps the most notable departure from average sports car construction and appearance is the Pegaso's plexiglas rear canopy. Giving the car a boar-tail look, it provides increased vision toward the streamlined rear—a much-needed addition to this type of body design. Some of the car's finer appointments include push-button-operated doors, built-in (removable) traveling cases, and a generally plush interior in keeping with the car's cost.



A Car for Flaming Youth

Photos by Jack Campbell

IT MUST BE HARD for Elmer G. Ulrich, a dignified Santa Monica, Calif., business man, to keep from donning his blazer and crying "It's the cat's pajamas!" every time he climbs into the compact cockpit of his Mercer Raceabout. But he's content just to enjoy the envious gazes of young and old as he drives around Southern California.

Once a showpiece of the D. Cameron Peck collection, the Series V roadster gives a good picture of what was "the greatest" at the start of the Roaring Twenties. The cream-colored Mercer with the sporty red leather bucket-type seats could have been yours for \$4675, F.O.B. Trenton, N. J., in 1920.

Although it has only a 115-inch wheelbase and perches high on oversized 32 by 4.5 tires, the car seems long and low. The 303.48-cubic inch engine

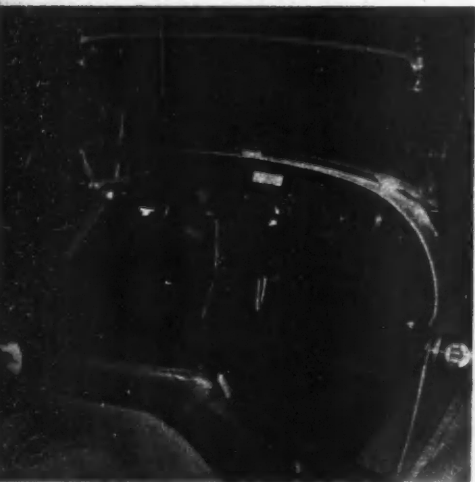
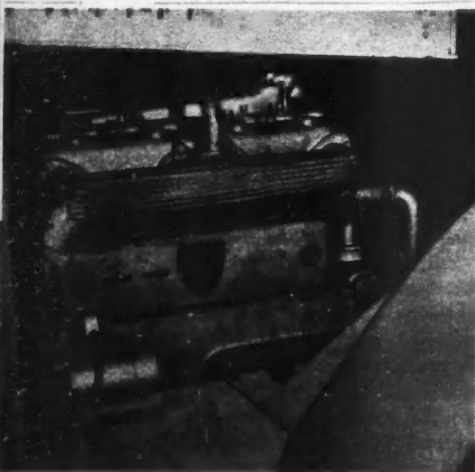
allows little wasted space between the radiator and the handsome, functional dashboard. The large four-cylinder Mercer powerplant combines a 3¾-inch bore and an impressive 6¾-inch stroke to give a 70-bhp output (half that of the Dodge V-8).

The four-speed gearbox gives final ratios ranging from 11.91:1 in first gear to 3.22:1 in fourth. In 1920, the factory guaranteed a time of 48 seconds over one mile. Considered a true sports car in its day, this car placed second in a field of 35 cars at the Atlantic City speedway in 1929.

The solid oak steering wheel and dashboard, sparkling chrome hardware and wire wheels create a striking picture, but perhaps the most unusual feature is the snake draped menacingly along the left front fender. When the valve under the dash is released, the snake gives out with a tremendous hissing sound.

Wire wheels, good looking on the 1920 Mercer, are popular now, but we'd hate to hazard a guess at the future of the hissing snake. Whatever the future holds for accessories and the like, it will always hold a place for cars like the Mercer Raceabout, a car combining good appearance with excellent roadability and power, yet conservative enough to drive to church on Sunday.

Motor Trend



Forty-eight





*A simple merger of the
old and the new results
in a practical, possible . . .*

'53 LINCOLN CONTINENTAL



EVER SINCE THE DAY the Lincoln Continental was put into retirement, rumors have been coming from the Motor City concerning the return of this fascinating, semi-custom automobile. For five years, "Continentalists" have waited expectantly for the announcement that *it* was coming back.

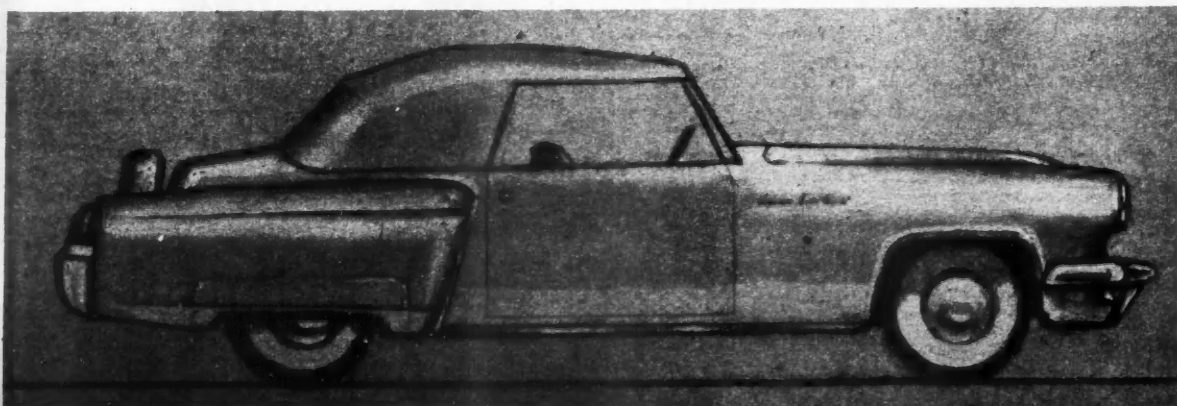
Tired of waiting, and tiring of bulbous, boat-like cars with bogus Continental features, Newton S. Leichter, an industrial designer of Hollywood, Calif. (and a Continental owner), has produced an idea that may make Detroit sit up and take notice.

The car shown in his drawings may displease some purists, for rather than being a late-model car with a Continental appearance, it is a car of 1940-48 vintage, brought up to date with 1953 flavor. Although it could be done by backyard builders (at a cost of about \$430 for '53 Lincoln fenders, hood,

grille, and bumpers), designer Leichter firmly believes that this car should be a factory product, and that the car could be mass-produced with very little re-tooling on the part of the manufacturer. Power, suspension, and interior features would be those of current models.

The absence of chrome on the hood, sides, and around the windshield should satisfy modernists and conservatives alike, and the flat-top body and rear deck (and the tire mount) would keep Continental addicts from chewing their nails.

The up-to-date Lincoln Continental may not become a reality, and Detroit may continue to ignore the cries of the Continental clan, but demand and ease of construction make this car something to think about. The question now is, "Will someone do something about it?"



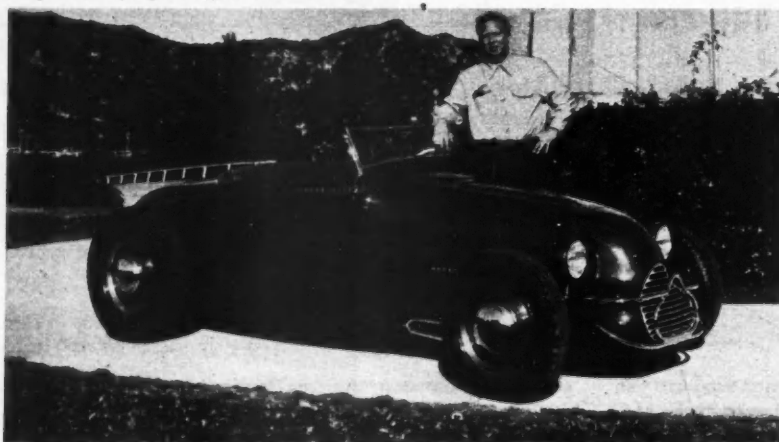


*Being an account of a harried
reporter's search for the answer
to the question . . .*

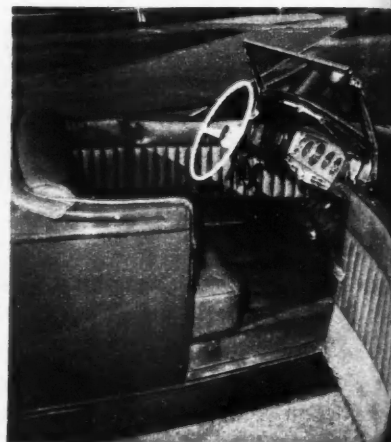
WHEN IS A CUSTOM SHOP?

Photo Story By Robert Behme

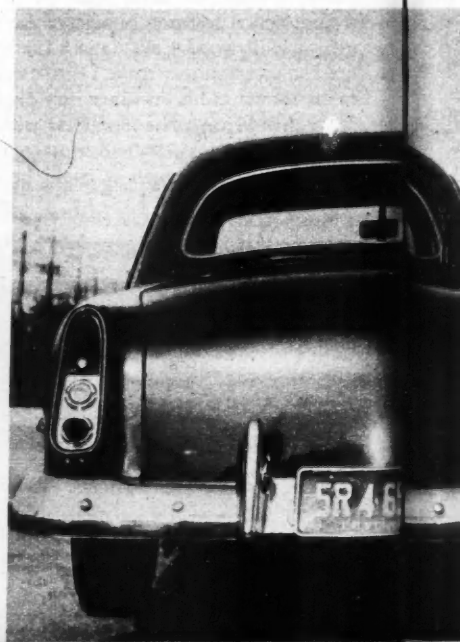
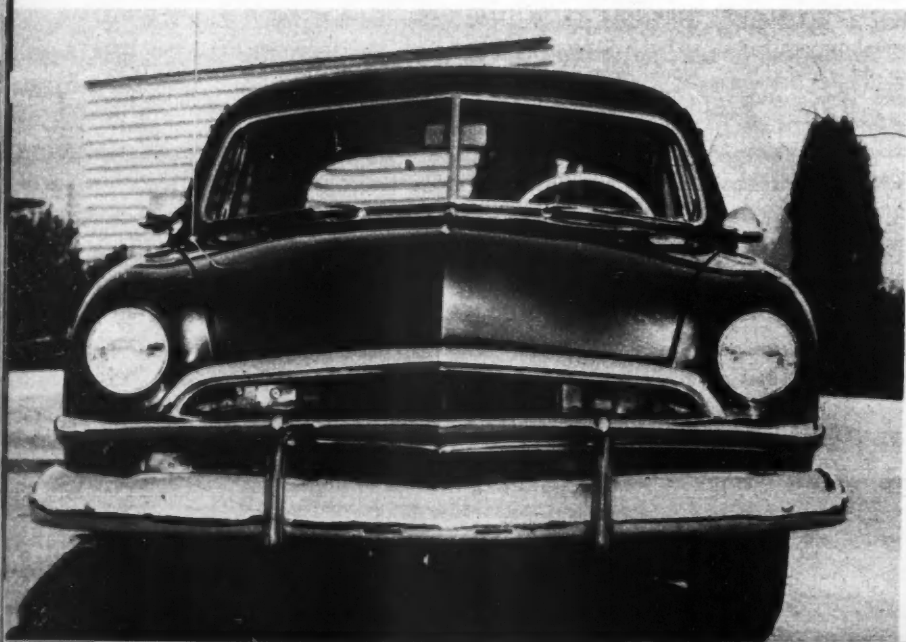
Clayton Jensen putting an idea into metal



A design classic in its field, Dick Flint's roadster set a pattern that many top customizers used later. Construction ideas used here appeared on other custom jobs.



The neat, attractive interior of the '29 roadster shows top quality workmanship



James L.
Manag
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James E. Potter
Managing Editor
Motor Trend Magazine

Dear Boss:

If I may venture an opinion, you sure threw me an outside curve when you handed me this assignment.

"How can a reader start his own custom shop?" you asked. "Tell them how a custom shop differs from a regular body shop."

I thought the story would be pretty easy when I first heard of the assignment. A body shop uses the same tools as a custom shop, so I figured the answer would be the way the tools were used. But I've found out there's a lot more to being a professional customizer than just knowing how to weld.

Sincerely,
Bob Behme

TREND, INC.

Dear Bob:

Cut the laughs. Get the information. Write the story.

Jim

Dear Boss:

I'm not kidding. After checking into this problem I've begun to think a professional customizer has to be an artist. He's got to have inspiration, or call it imagination — I don't care what you call the stuff, a professional customizer must have it. He must have a feeling for metals because they're his medium. Just as a sculptor takes a piece of clay and molds it into shapes that people find interesting and beautiful, a customizer must be able to take a stock Detroit car and rebuild it into new and exciting shapes. Follow me, Boss? And that leads to a question:

I think you'll agree that any fellow who has 400 bucks can go out and buy up a mess of tools. The guy rents a building and hires a sign painter to paint a sign that says, "Customizing Cars, Our Specialty." Is he really in business? Just cause he's got the tools and knows how to weld, does that mean he'll produce a good car?

Please?
Bob

Dear Bob:

Down, boy. We realize what you're saying is more than just high-sounding words, but give us facts. The man who brings his car to a specific custom shop does it for specific reasons. He likes the kind of designs the shop has produced. He likes the quality of work the shop crew does.

Jim

Dear Boss:

How right you are! Both boys here at Valley Custom, one of the nation's top shops, are quality workmen. The interesting point is that they got their feeling for perfection in different ways. Neil Emory is one of the owners. There is a rumor floating around that when he was two months old, his nurse found him on the floor trying to section his buggy. He's that crazy about cars. Always planning to make them better.

Clayton Jensen, the other owner, spent several years working as a combination truck mechanic and driver for a local firm. After the war he worked on the assembly line at the Chevrolet plant in Van Nuys, Calif.

Both boys were in the service. Neil
(Continued on page 78)



This '37 Ford pickup shows unconventional approach. Body has been sectioned and dropped, hood shortened, lowered



Front, rear, and side views of Ron Dunn's '50 Ford club coupe display a smooth compromise of the American stock car with a flair of European styling and the note of distinction from the Valley Custom Shop. Although the body has been sectioned, the car's glass area is untouched. Note the full-size wheel cutouts

Fifty-one

CLASSIC COMMENTS

How to Restore a Classic

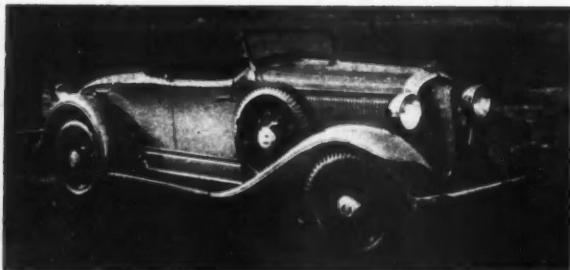


What to do about the parts that keep it running, and those that others can see. Number 3 in a series.

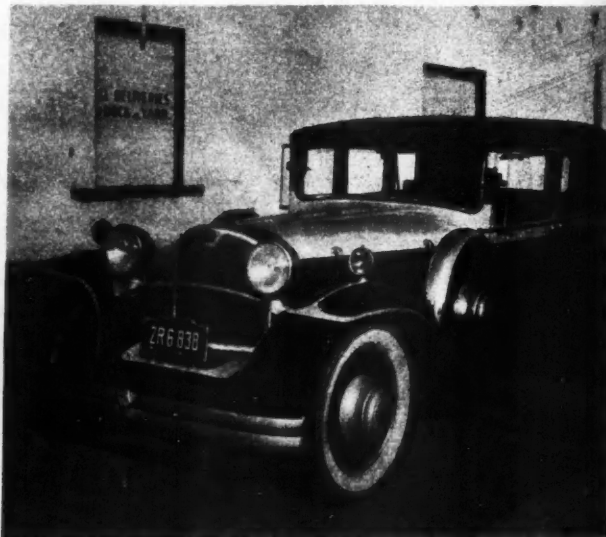
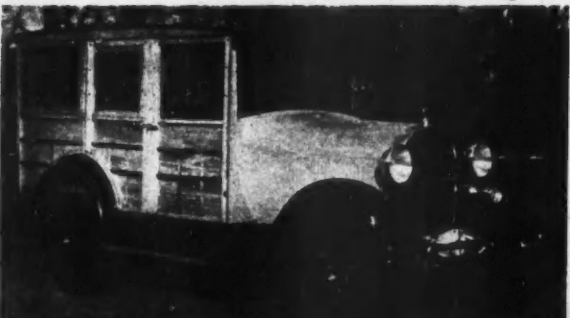
This latter-day Stutz has been restored with real respect for its novel features

By Robert J. Gottlieb

Photos by Jack Campbell and Eric Rickman



The car you restore may not be a true classic, but a clean Plymouth or Model A whose lost youth you can bring back



Perhaps you'll find a front-drive Ruxton with the original art moderne paint job that accentuated its dashing lines

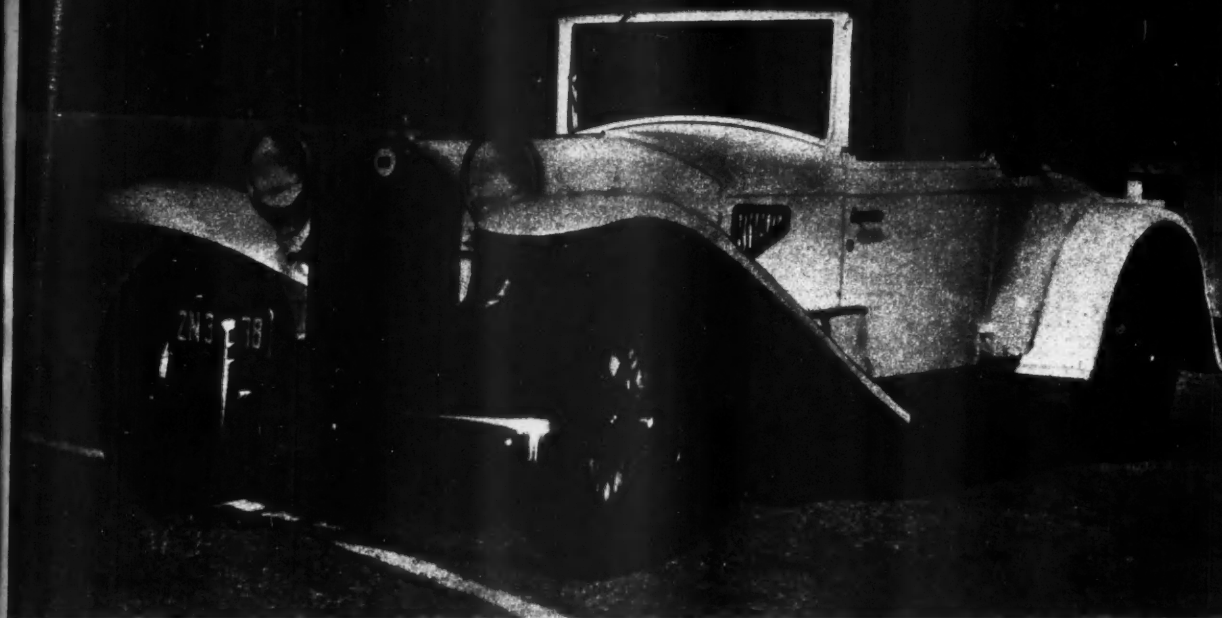
Motor Trend

Cream

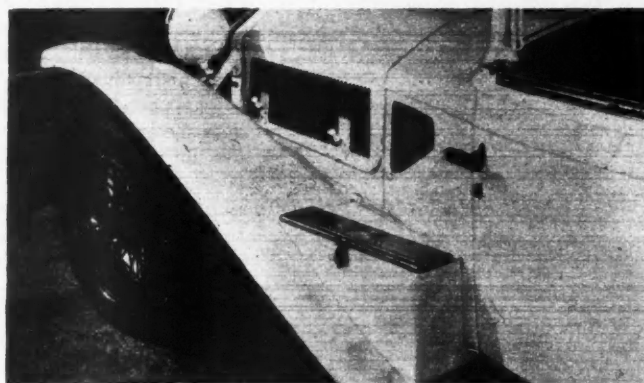
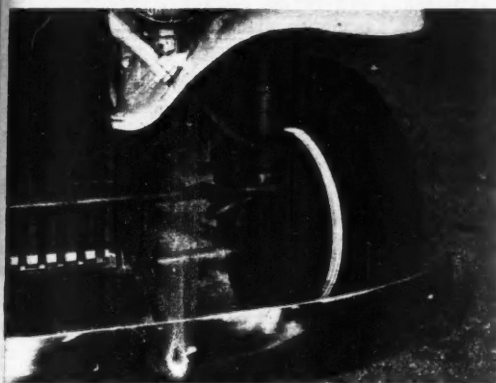
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July 15



Cream paint and copper-plated trim make the most of this determined-looking 1927 Lancia, the ancestor of the V-4 on page 55



Independent front suspension is still one of the best They used to be called mudguards, and so they were—but not for others

STEP 7. (a) (Continued) Be sure to grind your own valves, and do it just as the manufacturer says. If he says the engine must be hot or must be cold, don't ignore it! Valve guides should be carefully reamed and valve springs checked for tension and size. All parts must be thoroughly cleaned prior to assembly, so that bits of carbon do not remain in the valve guides or on the valve seats. Be sure that you remove all traces of the grinding compound.

Defective camshafts should be replaced or reground by competent agencies, but minor defects in lobes may be hand lapped. Factory specifications must be noted and timing marks observed during reinstallation.

One of the most important jobs in the overhaul of an engine is the one most frequently overlooked. A crankcase is

ventilated so as to prevent condensation of fumes which cause oil dilution. Crankcase breather tubes must be open and free from obstruction if the engine is to operate efficiently. Opening and cleaning the tubes is a simple but important operation.

(b) *Cooling System.* The removal of the radiator is generally a simple task on classic cars. If the engine heats with thermostats removed and thermostatic controls in the open position, the radiator is in need of rodding. It should be taken to a reliable radiator shop where the tanks are removed and long rods inserted into the radiator tubes. This process removes rust and scale, thus increasing the flow of water through the system. Rodding is in itself an inexpensive operation but it often discloses many minute holes which must be soldered. This is a

time-consuming operation, and cost is usually based on the actual time spent by the repairman. Do not forget to clean the water passages in the block; otherwise, deposits from it can move to the clean radiator and clog it again.

Most classics have thermostatically controlled shutters which are often difficult and even impossible to repair. In this event, it is best to block the shutters in the open position and install a modern internal thermostat in the system. Water pumps require little attention unless leaks occur around the packing nut. Proper procedure requires that the packing nut be tightened just enough to stop the leak. If it is tightened too much, the packing is compressed. This may create friction and score the impeller shaft. A similar mistake is often made in regard

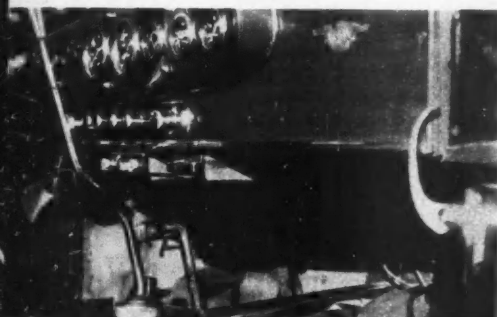
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i SALUDOS AMIGO!

A Photo Story
By DON POPE



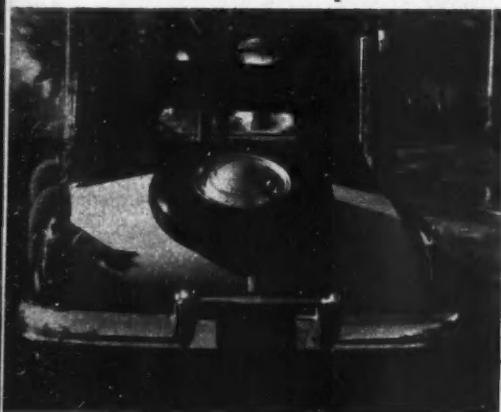
Bold, straight grille bars blend well with the sweeping lines of the Amigo Custom



Altered interior sports chromed shift bar



*Chrome strip gives Cord-like look to hood
Tire mount is in best sports car tradition*



Fifty-four

CAR MANUFACTURERS in the United States produce "dream cars" and fanciful "sports cars" to keep a jump ahead of the imaginative car buyer. European stylists, while retaining Continental flavor in their cars, must pace American standards if they want to find a market here.

In Mexico, this mad scramble to produce the apple of the car buyer's eye is lost, for prohibitive prices eliminate the demand for constant style and construction changes. Imagination, however, has thrived there, mostly as a result of the cars seen at the Pan American Road Races. The Mexican people have seen what stock cars can do, and they have seen the beauty in foreign sports cars.

Jorge Amigo, a Mexico City manufacturer, like many of his countrymen, has an intense interest in automobiles, and like his neighbors north of the border, he had an urge to create something distinctive and apart from the stock sports car or production stock car.

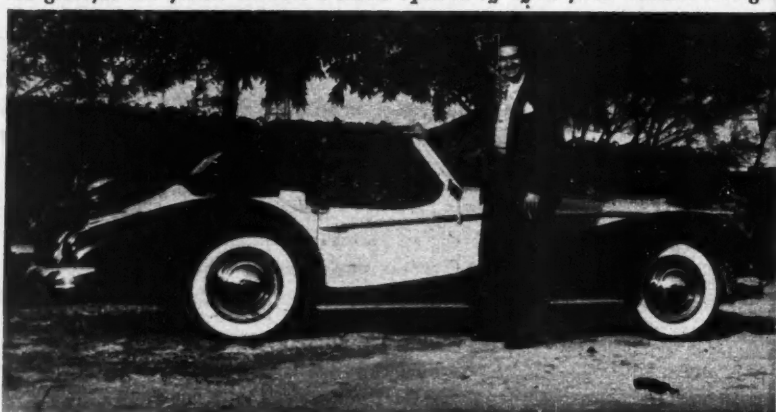
Senor Amigo beams with pride as he towers over his low, long creation. Note how the graceful rear fender receives a subtle squared-off effect from Cadillac taillights

The result of his imagination and skill is this striking black-and-yellow hand-made custom car. Originally a stock '35 Ford sedan, the car is powered by a Mercury engine sporting Edelbrock heads, Edmunds manifold, dual carbs, a dual exhaust system, and $\frac{3}{4}$ -race-grind cam.

While he has never driven the car at top speed, Senor Amigo has out-accelerated an XK-120 in impromptu drag races. The 3000-pound custom, with a rear end ratio of 3.54:1, is capable of 40 mph in low gear, 75 mph in second, and an estimated 110 mph in third gear.

Exploration in Mexico has radically changed. Where once the Spaniards sought gold and land, the present-day Mexican is seeking knowledge of a new world, introduced into his country by international motorists.

Perhaps men like Jorge Amigo are preparing Mexico for a role as a nation active in automobile design, racing or production. *¿Quien sabe?*



Motor Trend

Yankee-type cars from across the Atlantic

By Gunther Molter

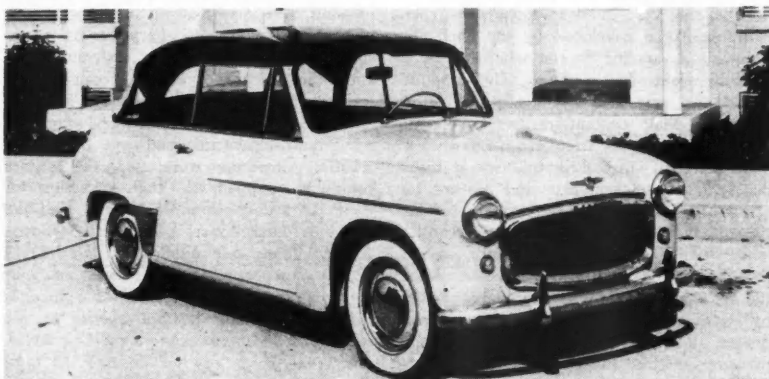
ENGLAND: STIRLING MOSS, the English racing driver, set new Belgian records for the flying mile on the Gand-Ostende highway in the new **Sunbeam Alpine sports car** now appearing in the U.S. He came through for a speed of **118.86 mph**, and Sheila van Damm, who competed in the Monte Carlo Rally with a Sunbeam-Talbot, finished the mile in the Alpine at 119.87 mph. The two-seater sports roadster is a further development of the Sunbeam-Talbot 90. The powerplant is based on the 138 cubic inch Sunbeam **ohv four-cylinder**, which was stepped up from 6.45:1 to 7.42:1 and which, through a change in the timing and camshaft, now delivers **81 bhp at 4200 rpm** (as against the former 71 bhp at 4000). Special shock absorbers and a stronger frame are used. The car weighs 2950 pounds at the curb and will cost around \$3000 in the U.S. Special equipment for still higher performance is available.



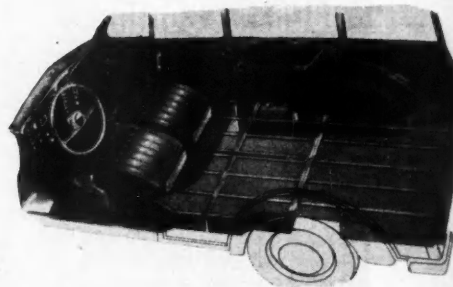
Top-of-hood louvers, optional racing windshield (not shown) combine with a luxurious cockpit and steering-post shift to make the new Sunbeam Alpine a likely dollar-earner

GERMANY: The experimental division here at Daimler-Benz has readied a new **Mercedes 300 SL racing and sports car**, with better performance than last year's model which was so successful in the Mexican Road Race. The new 300 SL is even lower, the nose is lowered and lies deeper (decreasing

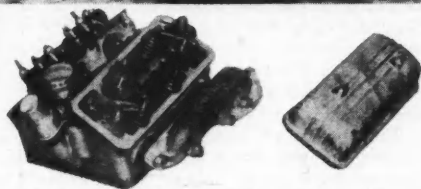
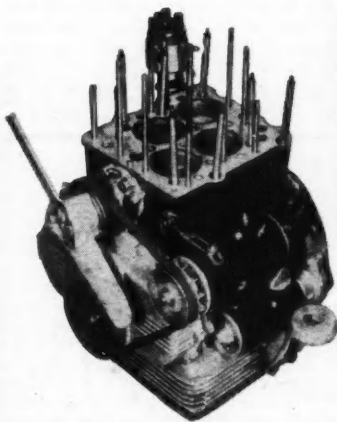
(Continued on page 60)



Hillman Mark VI Californian with Italian-looking grille sells for \$1900 at entry ports



German DKW wagon's back seats fold separately. Front seat backs form pillows



New small Lancia, obviously related to its larger brothers, sports a staggered four-cylinder engine with 38 bhp, two lateral camshafts. Cylinders form a 10-degree angle



WIDE WORLD PHOTOS

Demand for this rear-engine, front-door Italian Isetta will not upset U.S. market

363 different cam grinds at Harman - Collins

363 cam grinds available from Harman & Collins... the largest, most versatile line of cams in the world. Whether you drive a Ford, MG, Cadillac or almost any other make... for competition or street... there's a Harman & Collins grind that's right for your purpose - precision-built to your complete satisfaction. 363 DIFFERENT CAM GRINDS... thoroughly tested and inspected by specialists to insure perfect timing, lift and running clearance. Whatever model you drive, there's a Harman & Collins cam designed for your car!

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Rx for Your Town's Sick Roads!

(Continued from page 35)

stationary or portable plant and then hauled to the scene of construction.

The Reclaimix process of reconstructing old roadways starts with breaking up the old pavement with a roter. The steel teeth of this tractor-drawn implement break up the pavement much as the teeth of a garden cultivator break up soil. Following the roter, a grid-type roller, which looks like a waffle-iron wrapped around a huge drum, is drawn over the broken pavement to reduce it to still smaller pieces. A traveling impact mill then scoops up the broken pavement and crushes it to the size desired for remixing. When the crushed material has been "bladed" by a road grader into windrows for mixing, it exposes the base for treatment (if it needs it). At this point the engineers enter the picture to take samples from the base and test them for moisture content, compressibility, sheer resistance, and other stability characteristics. Surface material samples are screened and analyzed for asphalt content and proper gradation of aggregate sizes. If the base proves lacking in stability, additives are used; if necessary, some new aggregate is blended into the windrows of old material.

Thus far, the operations are no different from orthodox procedures; the next operation is the key. A new asphalt softener which has been developed by the Shell Oil Company is applied to the windrows in a carefully controlled amount. The amount applied is governed by analysis of the original asphalt content of the pavement. This softener differs from other known asphalt solvents which flush the asphalt completely from the aggregate and prevent its acting as a binder. The new chemical softens the asphalt to a workable but tacky consistency which can be uniformly mixed throughout the reclaimed aggregate. After the reclaimed material is thoroughly mixed by blading the windrows with a patrol grader, it is spread and rolled in the orthodox manner to form a new road surface.

Highway engineers are a conservative lot and are often as reluctant as the medical profession to endorse new methods or treatments until they have been proved. The California Division of Highways has gone on record regarding a section of U.S. Highway 40 which was rebuilt by the Reclaimix process. Division officials have certified that after three years of use by 17,000 vehicles per day, this section is holding up as well as new highways constructed at the same time. The city of Havana, Cuba, has shown confidence in the new process by letting a contract for the rebuilding of its streets by the new methods. It is also approved now by the U.S. Bureau of Public Roads, U.S. Army, U.S. Air Force, U.S. Navy, C.A.A. and several state highway departments.

The new asphalt softening and road rebuilding process opens up several new avenues to highway safety. A two-mile stretch of road in Arizona was rebuilt two years ago using the new process. The pave-

ment was 27 years old, and because of the many coats of sealing and patching material which had been applied, sufficient material was recovered to widen the road from 18 to 24 feet. This additional width represented practically a free contribution to safety. Roadway and lane widths are largely inadequate because of ever-higher average operating speeds and the varying widths of our highway traffic. Extensive surveys made by the U.S. Bureau of Public Roads have proved that drivers have developed a behavior pattern which inclines them to drive farther from the edge of the pavement as their speed increases. On narrow two-lane roads, the clearance between vehicles passing in opposite directions at average speeds drops to frighteningly small margins. This is particularly true when both commercial and private vehicles use the roadway. Two-lane highways carrying mixed traffic at moderate speeds should be not less than 22 feet wide. If curvatures, grades, and visibility permit higher speeds, the width should be increased to 24 feet. Widths over 24 feet, however, encourage use of a two-lane highway as a dangerous three-lane death trap.

There are probably many cases similar to that in Arizona where excess material could be used to widen roadways. Many of our highways abound with sharp curves, excessive grades, poor shoulders, narrow lanes, and other unsafe conditions because highway administrators are waiting for funds to eliminate these hazards in one fell swoop by rebuilding the entire roadway. If cheaper rebuilding methods were used, the savings could be applied to the correction of these hazardous conditions and the job might be done sooner. —Robert Scollay

NOTE: Since our publication last month of the first article in this series on your traffic problem, we have received a flood of suggestions, comments, and queries on the subject. A predominant note in these letters has been "What can we do now to solve the traffic problem?" The foregoing article, of course, does not answer all the questions; however, it does point out a solution to one part of the problem. Your very interesting and valuable comments are now receiving concentrated study and we will discuss them with you in forthcoming articles. Next month: "Drivers' Licenses." . . . Editor.



"Here comes somebody—let's ask him if this is the address we're looking for."

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Me and My Big Mouth!

I Thought I had Retired . . .

Then a Chance Remark Started the World's Biggest Car Owners' Cooperative!

After a lifetime in the auto parts and accessories wholesale business, I figured I'd earned the right to take it easy in California, but I guess I was all wrong about that.

Wasn't long before a young fellow in my neighborhood dropped over to tell me about the '32 Ford he was reworking. "Incidentally, Gilky," he says (my friends call me "Gilky"), "I've been having some trouble getting the parts I need. Any chance you could help me out?"

Without realizing what I was getting into, I said I'd call a manufacturer friend of mine and see what I could do. Well, I got the parts all right, and when this kid thanked me for getting them for him at the wholesale price, I just said "Nothing to it! Glad to help out anytime."

That remark started a kind of chain reaction. Seems this young fellow had a friend who wanted to get some equipment for his '40 Mercury. And this friend with the Mercury had lots more friends—including a fellow in Phoenix and in Johnstown, Pa. They all wanted to get into the club (by this time, they were calling it a club and telling all their friends: "Gilky can get it for you wholesale").

OUR MEMBERS USE CARDS TO GET DISCOUNTS

Frankly, it was getting to be considerable trouble writing notes and making telephone calls to manufacturers asking them to give wholesale prices to this member and that member. So when somebody suggested we have membership cards printed that the members could use to get discounts, I said go ahead. That's when we started calling it the Gane Economy Club, and that's probably when you first started reading about it in the big magazines.

CLUB MEMBERS TRY NEW PRODUCTS FREE

About this time, one of the manufacturers I knew told me he had some new speed equipment he'd like to get the club's opinion on. "Gilky," he said (my friends call me "Gilky"), "ask some of the fellows to try it in their cars. Won't cost them a dime; I don't even want a deposit. Tell them to try it and if they don't like it send it back."

Some of the members took him up on that proposition, and that started another chain reaction: more manufacturers offered products for club members to test free of charge. Just automobile equipment at first; then stuff for the home, too.

With our wholesale discounts plus all the things we were getting free, word got around fast, and we had people writing us from all over the country wanting to join the club. As our membership grew, manufacturers offered us even bigger discounts, better free offers.

NATIONAL NON-PROFIT CO-OP

At this point, we asked ourselves: "why not become a national non-profit cooperative? Small grocers discovered years ago that they could get together and buy at carload prices much lower than they could get as individuals. Why wouldn't this same principle work for car owners?"

So we set up a cooperative somewhat like the ones the grocers, farmers, etc., have, but with some important differences. Our members pay no dues or fees of any kind and don't have to buy a nickel's worth of anything unless they want to.

Another thing: the club carries no merchandise, simply acts as a clearing house for automotive products & data. After testing new products, we make a deal with manufacturers to get discounts and free trial offers for our gang.

BENEFITS OF NATIONAL CREDIT CARD

How would you like to have a real "honest to goodness" National Credit Card? It's just like your regular oil company card, but it's honored all over the country by more than 130 different kinds of business. With this card, a qualified member can sleep in a Miami hotel, eat at a Los Angeles restaurant, fill up with gas in Houston—all without cash! This wallet card can even be used to finance a vacation, a wedding, or practically anything else up to \$1175.

If you've ever been caught short of cash, you know how handy it would be to have a National Credit Card.

by M. M. "Gilky"
Gilkerson



WHY NOT JOIN OUR CLUB?

If you'd like to grow with us from our present 500,000 membership to our goal of 5 million, we'd like to hear from you. Just to make it interesting, we've put together a big free package for new members. It's quite a package—even includes a buck's worth of gasoline coupons. About the products you get to try free, I'd like to explain that the Club never sends you anything to try without getting your permission first. Easiest way to show you how this works is to give you an example: the Automatic Tune-Up Injector. Now, this has stirred up a lot of interest because it's a sort of a poor man's mechanic. As you know, when you get an engine tune-up, the mechanic flushes out your engine with a solvent. Well, the Tune-Up Injector is a simple apparatus that tucks under the hood and does this flushing-out every 100 miles, automatically—before carbon becomes a problem.

YOU CAN TEST THIS FREE

If you'd like to try one in your car, just check the last line in the coupon and we'll send one along. You don't send any deposit, and you don't pay the postman anything. You even get a \$1.00 pint of tune-up fluid free, and you keep this whether you like the Injector or not. Understand, you don't have to try the Tune-Up Injector to join the club. Just check the coupon if you'd like to see it; if not, join the Club anyway!

YOU'LL ENJOY CLUB NEWSPAPER

When you fill in your application below, send along \$1 (cash, check, money order, even stamps OK). This dollar covers cost of printing the club newspaper (you receive your first copy right away) and postage, etc., expenses of the club. This newspaper gives news of club activities and confidential reports on automotive products. I think you'll get a kick out of reading it.

WE SEND EVERYTHING ON APPROVAL

When you get your package, browse through it and decide whether or not you want to be a member. If you do, fine; welcome to the Club. If not, fire the package back at us (frankly, some people have done exactly that) and we'll send your buck back with no questions, no hard feelings. Same goes for the Tune-Up Injector, if you check that in the coupon—if you don't like it, bounce it back and we're square. That's the deal. The way I see it, you've got nothing to lose, and I'm betting you'll enjoy being a member as much as we'll like having you in the club!

GANE ECONOMY CLUB, Dept. CM-7, 6399 Wilshire Bl., Los Angeles 48, Cal.

APPLICATION FOR MEMBERSHIP

in the Great National GANE ECONOMY CLUB

Dept. CM-7, 6399 Wilshire Blvd., Los Angeles 48, Calif.

Attn: M. M. "Gilky" Gilkerson, Secretary

Dear Gilky:

I'd like to see the new member package. If I think it's a good deal, I'll keep it and my life membership card entitling me to club discounts and other privileges. If I decide not to join, I'll send the package back within 10 days and you'll return the dollar I'm sending you.

Name.....

Address.....

City..... Zone..... State.....

Make of car..... Year.....

☐ Send me the Automatic Tune-up Injector for free trial.

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DSM Coils are available for 6-volt or 12-volt ignition systems. Each DSM Coil bears the trade mark DSM moulded on its waterproof case.

DSM Coils may be obtained from all leading automotive supply houses, or for information write general offices listed below:

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Jobber Inquiries invited

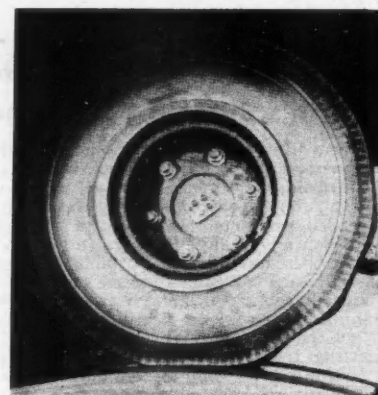
Fifty-eight

How safe are your tires at high speeds?

At normal speeds your tires are safe enough, but what happens when you are driving at 90, 100 or 110 mph...?

By J. J. Robson*

Firestone Tire and Rubber Company



The action of a traction wave is clearly seen in this high-speed photograph of a tire running on a smooth laboratory drum at 120 mph. The ripple is caused by heat

SINCE 1948, the year that marked the end of pre-war concepts in automobile manufacturing, a notable rise in horsepower has accompanied the equally notable increase in design possibilities.

In the short span of five years, power has increased from 15 per cent (in the light-car class) to 34 per cent (cars over 4200 pounds). With this increase in horsepower, car manufacturers are faced with the responsibility of raising their product's safety factor to keep well ahead of its performance. A share of this burden falls on the tire manufacturer, whose job it is to pace the steps of the fast-growing automobile industry.

The potential high speed of today's production cars brings one question to mind. What is being done to provide blowout protection at high speeds? The average driver, when he thinks of blowouts, is concerned mostly with nails, sharp curbs, and holes. Tough construction and self-sealing tubes have given us added safety at low and moderate speeds, but what about speeds in excess of 80 mph?

At high speeds, a danger other than sharp objects is present: heat. Tread temperature can reach 280°F in 10 minutes at 100 mph. These temperatures become more than just high figures when it's pointed out that rubber vulcanizes in this heat range. In the same way that your tire can be vulcanized, so can it be devulcanized, with the loss of its strength and adhesion.

At lower speeds, 80 to 90 mph or less, the tire builds up heat more slowly, and is spared the shock of sudden high temperatures. Also at lower speeds, traffic conditions usually allow periodic slowing down, giving the tire a chance to cool off, and keeping the temperature down.

A rapid build-up of heat and sustained

high temperatures results in what is known as a traction wave. This is a distortion of the tread and tire body found at speeds near 100 mph. The distortion causes unusual flexing and stress in the tread region, adding to the already high temperature and increasing the possibility of the tread leaving the tire body.

To avoid this problem, new types of rubber compounds with increased adhesion qualities are being developed. Further steps have been taken to establish a better bond between the fabric cord and the surrounding rubber that makes up the tire body.

How can we provide adequate stability and handling for quick and sure response at high speeds? That's the question facing tire engineers now that they've progressed with tire design and materials. Steps are being taken to improve stability, but the problem of retaining comfort is still present. These life-saving technicians have been able to make adjustments that provide a real step forward in high-speed handling and resulting safety.

Out of their studies, engineers have found things other than manufacturing improvements. One of these is the use of extra tire pressures for high speeds. With four to six pounds of air added, tire temperature drops, and the traction wave is lessened. They make it clear, however, that this is merely a means of relief for hard-taxed tires under extreme conditions, and not a recommended change for standard inflation tables.

A break-in period for new tires is suggested for high-speed service. Initial tire care and step-by-step increases in speed will equalize stress throughout the tire and create a balance between tread and internal air temperatures.

The continued efforts of the tire manufacturer to keep up with the car builder in this day of high-powered production cars add up to safety first where you, the drivers and car owners, are concerned.

*From a paper delivered before the SAE National Passenger Car, Body and Materials Meeting, Detroit, Mich., March 3-5, 1953.

Motor Trend

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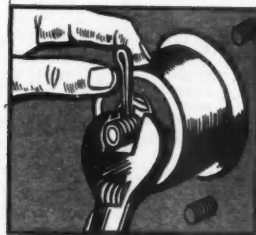
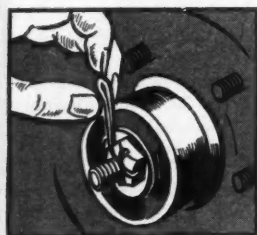
Get 5000 Extra Miles Per Tire

Plus Safer, More Accurate Steering

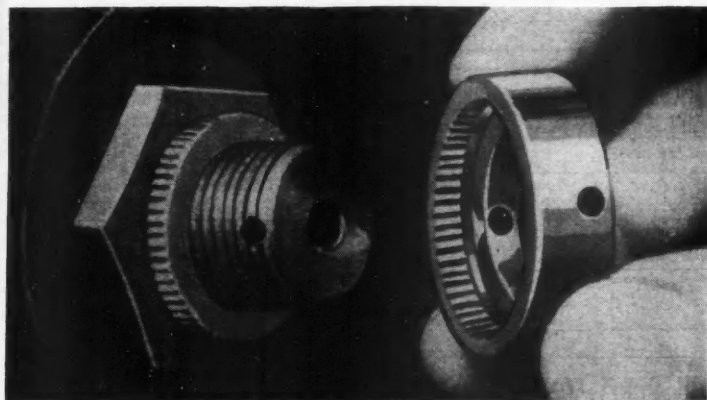
Precision Machinist Finds Simple Answer to Problem that Baffled Experts for 42 Years!



YOUR CAR IS ACTUALLY DRAGGED SIDEWAYS as much as 55 feet every mile you drive because of "snaketracking" (see illustration at right) due to loose front wheel bearing nuts. This causes bearing play, excessive, uneven wear and "cupping" of front tires, hard steering and alignment problems.



CONVENTIONAL SLOTTED bearing nut is first adjusted to correct setting. Then the trouble begins: because no two slots line up with the hole in the spindle, nut must be backed off from correct position until (by trial and error) cotter pin fits in one of six slots. Thus the nut is almost always too tight or too loose. The "built-in" looseness is magnified 40 times from the spindle to the tread of your tire, causing as much as $\frac{3}{8}$ " tread wobble.



HERE'S HOW THE "EDUCATED NUT" solves the problem with interlocking construction. First, the hexagonal part of the nut is tightened to exactly the right setting, and it is never moved from that position. Bearings are locked in precision adjustment (leading automotive magazine reports .001 accuracy!) with ingenious 60-point micrometric head. Saves tires, bearings, brakes—even eliminates 90% of brake squeaks. Actually easier to install than conventional nut.



Odds are 100 to 1 against accurate wheel bearing adjustment in your car—regardless of how much it cost, or how new it is. A fundamental weakness in the design of conventional front wheel bearing nuts makes it nearly impossible to adjust wheel bearings accurately, or readjust them accurately as wear occurs. This play in front wheel bearings causes re-alignment and adjustment problems. Your tires, brakes and bearings wear out faster than they should; steering is harder and less accurate—all because of excessive front wheel wobble.

Detroit engineers, with millions of dollars of equipment at their disposal, have never found the answer to this "unsolvable" problem of automotive design.

Then a precision machinist named Polizzi—whose only connection with the automotive industry was that he owned an automobile—discovered the answer. Like many baffling problems, the answer was astonishingly simple. Instead of attempting to improve on the conventional castellated nut, Polizzi abandoned it entirely and designed a nut with two parts that lock together in precision adjustment. Called the "greatest advance in wheel engineering in 42 years" his "Educated Nut" makes front wheel bearing adjustment 10 times more accurate—so precise that it even eliminates the need for balancing wheels, and for the first time makes perfect wheel alignment possible.

One big trucking company reported a \$50,000 saving the first year on tire, brake, and bearing replacement costs—always a major headache in the industry. Other fleet operators, as well as thousands of private car owners, have also reported big savings.

Save \$20-\$50 This Year on Tire, Brake, Bearing Wear and Wheel Alignment!

Send for 10-Day Free Trial Offer

Send us your name and address, make and year of car, plus only \$2.98 for complete set for any passenger car (for trucks, trailers, buses and tractors, write for special prices). We'll send you a set of "Educated Nuts" postpaid. If they don't do all we say they do, send them back for full refund: no obligations, no questions asked.

Write today!

MEHREN INDUSTRIES

317 Mehren Bldg.,

9909 Santa Monica Blvd., Beverly Hills, Calif.

MEHREN INDUSTRIES, 317 Mehren Bldg.

9909 Santa Monica Blvd., Beverly Hills, Calif.

Gentlemen: Please send me a set of "Educated Nuts" to try in my car for 10 days. If not entirely satisfactory, I may return them for full refund without obligation.

() I enclose \$2.98; you will pay postage

() I enclose \$1 Deposit; send C.O.D.

Name.....

Make of Car.....Year.....

Address.....

City.....Zone.....State.....

Dealer Inquiries Invited

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FENDER SKIRTS

IMMEDIATE DELIVERY!



DSM COILS
for all cars!

Here is the finest ignition coil in the world. 30,000 output . . . faster acceleration . . . smoother performance . . . greater economy.

\$15.25 ☐

Coils come with brackets and instructions. Quick-simple installation . . . only 15 min. Fill in coupon with year, make & model. **DUAL POINT Breaker plate kits by DSM.**

FORD-MERCURY-LINCOLN	
*Ford 1949-51 (ribbed)	9.95 <input type="checkbox"/>
Ford 1949-51 (cut down Merc. type)	14.95 <input type="checkbox"/>
Ford 1949-51 (flat type)	9.95 <input type="checkbox"/>
Ford 1949-51 (flare bottom)	12.95 <input type="checkbox"/>
Ford-Mercury 1952-53 (full type w/bottom flare)	12.50 <input type="checkbox"/>
*Ford-Mercury 1952-53 (like original)	9.95 <input type="checkbox"/>
Lincoln-Mercury 1949-51	14.95 <input type="checkbox"/>
PLYMOUTH-DODGE-DE SOTO-CHRYSLER (Mo-Par type)	
Ply.-Dod.-DeS.-Chrys. 1946-48	10.95 <input type="checkbox"/>
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Plymouth-DeS.-Chrys. 1953	19.95 <input type="checkbox"/>
CHEVROLET-PONTIAC-BUICK	
Chevrolet 1946-48 (Fleetline)	12.95 <input type="checkbox"/>
Chevrolet 1946-48 (w/mldgs)	16.95 <input type="checkbox"/>
*Chevrolet 1949-52 (like original)	9.95 <input type="checkbox"/>
*Pontiac 1949-52 (like original)	11.95 <input type="checkbox"/>
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Chevrolet (tutor) 1949-53 (w/bottom flare)	19.95 <input type="checkbox"/>
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Willys Aero 1952 (w/bottom flare)	19.95 <input type="checkbox"/>
Studebaker 1946-52 (all models)	10.95 <input type="checkbox"/>
BOX SKIRTS . . . all cars	9.95 <input type="checkbox"/>
TEARDROP SKIRTS . . . all cars	9.95 <input type="checkbox"/>
*All chrome skirts	18.95 <input type="checkbox"/>
(All above skirts have locking levers and adjustable ends)	

Accessory Mouldings
for
**FORD-MERCURY
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Write for catalog and prices.

Flying Wing Custom Grille Bars—
Fords 1949-52 19.95 ☐

Dual Points:
Engineered to work perfectly. Give smoother engine performance, higher speeds, more motor zip.

Available for Fords, Mercurys and Chevrolts.

Write for information and prices.

Hollywood DEEP TONE DUALS or DYNA-PAK	
1935-48 Ford-Mercury	18.95 <input type="checkbox"/>
1949-53 Ford-Mercury	23.80 <input type="checkbox"/>
1949-53 Oldsmobile	29.95 <input type="checkbox"/>
1951-52 Studebaker	29.95 <input type="checkbox"/>
1953 Buick (exc. conv.)	29.95 <input type="checkbox"/>
1951-52 Chrysler V-8 (exc. conv.)	44.95 <input type="checkbox"/>
1953 Chrysler V-8 (exc. conv.) incl. power steering	44.95 <input type="checkbox"/>
1953 Dodge	23.80 <input type="checkbox"/>
1952 DeSoto (exc. conv.)	44.95 <input type="checkbox"/>
1953 DeSoto Cust. V-8 (exc. conv.) incl. power steering	44.95 <input type="checkbox"/>
1942-52 Chevrolet (split manifold system)	39.95 <input type="checkbox"/>
Duals less mufflers deduct \$8.00	
DUAL COMBINATION SETS	
Complete with headers	
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1937-52 Ford-Mercury	19.95 <input type="checkbox"/>

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Beautiful—
Made to fit all cars with 15" wheels.
Stainless Steel

Give your car that Customized look.

Set of four 20.95 ☐

No matter what your needs may be, ask us for it. We carry a complete line of Automotive Parts. Our supply is always as complete as possible and priced to fit the pocketbook.

ORDER TODAY FROM MICHIGAN'S LARGEST KNOWN AUTOMOTIVE MAIL ORDER HOUSE . . .

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City Zone State

Be sure check is enclosed for proper amount.

Name of Car:

Year Model

MICHIGAN MOBIL PARTS COMPANY
1301 Mayflower St.
Lincoln Park 25, Michigan

European Newsletter

(Continued from page 55)

air resistance) and the form of the body as a whole is more fluid. Moreover, the 300 SL is shorter, and, therefore, easier to steer. Roadability—especially traction in curves—should be still better because of small changes in the rear axle assembly. The engine now delivers over 214 bhp (the previous rating was 175); and, finally, its peak speed lies above the last model's (how's that for evasion?). Overall weight has been sharply cut. Care to place any bets on the '53 Mexican Road Race?

ITALY: The famed Italian firm of Lancia, known not only in Europe but around the world for its unique sports designs, is now bringing out a new small car, the Lancia Appia. It is a 67-cubic inch machine, and is a technical "delicacy." The four cylinders are arranged in a staggered 10-degree V. The bore is 2.68 inches and the stroke 2.95 inches. The performance of this 7.4:1 powerplant is 38 bhp at 4800 rpm. The valves are over two laterally positioned camshafts and are activated by very short pushrods. Top speed of the small "Southerner" is something over 74 mph, and its acceleration is said to be outstanding. Nevertheless, fuel consumption is surprisingly low (29 mpg). The four-speed transmission has a steering column shift. The Appia has right-hand steering. Design of the drive components makes for a stable car. The front wheels are independently suspended; springing is effected through vertically mounted hydraulic shock absorbers which are adjustable. The stiff rear axle is suspended by two longitudinal half-elliptic springs, and vertically, mounted, telescopic hydraulic shock absorbers. The all-steel body is really a small version of the larger model Lancia, but on a 98-inch wheelbase and weighing 1804 pounds. . . . Concurrent with its presentation of the Appia, Lancia is introducing the new model Lancia Aurelia Gran Turismo with a 2.5-liter (149.5 cubic inch) V-6 engine. It has about 120 bhp; at 4900 rpm it delivers 118 hp; maximum rpm is 5200. Top speed of the Aurelia GT is 111 mph, although through comparatively easy tuning, speed can be brought to 124 mph. As compared to the two-liter (122-cubic inch) model, the body displays no major changes, except that the rear has been sharply rounded off. . . . At the same time Lancia has a three-liter (183 cubic inch) racing sports coupe in the developmental stage, whose V-6 engine will deliver 240 bhp at 7000 rpm. This engine has four overhead camshafts and dual ignition. With its very light and stable tubular frame, this car will not weigh more than 1716 pounds dry. . . . In Modena, Ferrari has already finished its first test drives with the new 2.5-liter (153-cubic inch) four-cylinder sports car. This model is chiefly destined for the 620-mile race at the Nürburgring at the end of August. From all of this, one can conclude that Europe is decidedly active on the sports car scene. Next month: photos and figures on Italy's first Diesel sedan (39 mpg!).

—Günter Molter

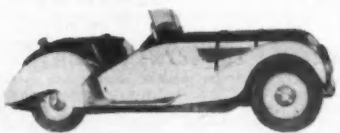
dream cars for sale!



The "Beast," a 1948 special built, handmade 16 gage aluminum body, with 1/4 inch plexiglass bubble, special chassis, transmission, motor, magnesium wheels, manifolds, etc.
Body hinges at rear and opens up electrically (like a clam shell). Can do 62 M.P.H. in second and over 110 M.P.H. in high.
This car has been publicized internationally as the car of the future with the perfect aerodynamic body. Excellent advertising medium for any business imaginable.
A genuine traffic stopper. Original cost \$18,300.00 (ask Mr. Russ Case, the orchestra leader in N.Y., who footed the bill). Be sure and see Fred Horsley's new "Dream Cars" book for full details, history, specifications and other photos. Price—any sensible offer.



1949 Special Fiat, with Zagato handmade aluminum body, Fiat 1086 cc block with new pistons, rings, pins, shells, sodium cooled valves, Cisitalia hand polished rods and crank, Abarth head, Abarth cam, Scintilla magneto, Cisitalia exhaust manifold and twin down draft Solex carburetor manifold, special oversize air cooled brakes, Borroni chrome plated record wheels, Pirelli "Corsa" racing tires, special steering wheel, machine finished instrument panel and special overdrive transmission, giving 8 speeds forward and 2 reverse. A sport car enthusiast's dream come true. Cost over \$9400, asking \$3750.00.



The famous "Effy 500" precision built formula III midsize racer. Chrome-moly handmade tubular chassis, aluminum body, independent suspension on all wheels, 12" diameter hydraulic four wheel brakes, 500 cc J.A.P. 14 to 1 compression single cylinder engine develops 43 B.H.P. at 6000 R.P.M. 4 speeds forward, acceleration, speed and road holding is phenomenal. The racing enthusiast's answer to an equal chance for front position. Imagine—a complete racing car ready to go, for only \$3000.00 F.O.B., N.Y.



1939 Special type 328 BMW in excellent condition. New piston rings, pins, shells, heavy duty oil pump and transmission gears. Special oversize gas tank with emergency tank valve selector, special Hirth Electron gear box and bell housing, special Mille Miglia head with oversize valves and hand polished rocker assembly, fully ported and polished with 3 down draft Solex carburetor manifold, special twin exhaust manifold, leather, top and side curtains in good condition.
Here is the forerunner of today's \$7000 Bristol and Fraser Nash. A real thoroughbred sports car that never dies. Asking \$2850.

GRAND PRIX MOTORS

537 Plandome Rd., Manhasset, L.I.,
New York

Digging into the Past

By Walt Woron

IN SETTING UP the Ford Motor Company Archives (a depository of all historical records of the company plus the founder's personal and private papers), many highly entertaining facts were brought to light. Among these facts is one that can probably be called one of the strangest trades offered for a car in automotive history. In 1908, a prospective customer requested of an Indianapolis Ford dealer:

"I will give you 448 gallons fine good O.K. Bourbon whiskey at the distillery in Peoria, revenue \$1.15 per gallon and \$229 in loans on the certificate; I will pay the loan and \$500 in cash or \$820 in a trade for a Ford car. So describe and give full particulars." (P.S.—The trade was not made.)

In the same year, Ford had a solemn word of advice to its salesmen: "Don't get yourself up like some young sport whose chief aim in life is to 'smoke up' a half-dozen packs and take his lady friends joy riding. Selling cars is a dignified profession; dress and act the part."

Two years later, in 1910, another directive disclosed Ford's concern over the then-prevalent feeling that "the wearing of goggles by the real motorist is fast being relegated to the backwoods." A notice to dealers and employees said, in effect, that

to be seen with eye goggles was not in poor style, and that not wearing them would, in fact, play "havoc sooner or later upon the eyes of the man who does the driving." It went on to point out that "the constant touching of dust and particles on the eyeball with terrific velocity sooner or later creates an inflamed condition which proves anything but interesting."

Road races, hillclimbs and pulling tests were some of the measures taken by the dealer to prove to the public that his car could take it. In 1912, the situation rose to the extreme of seeing how many people could be loaded into one car. A probable record is held by a Model T owned by Joseph Miller, of Payne, Ohio. He loaded 50 boys, averaging 70 pounds each, in and on his car—then drove in high gear through the city streets. Where he put all of them is not entirely clear, for unfortunately no photograph was taken of this fantastic feat.

The foundation of the Ford Motor Company Archives, recently dedicated in Dearborn, Mich., not only vividly brings to life that byword of young and old alike, "Model T," but preserves for posterity the milestones along the road of American motoring and the growth of an industry.

Test Your Automobile History

By Roy G. Clark

1. Which one of these early cars was steam powered: Autocar, Dort, Saxon, White?
2. You shouldn't have much trouble identifying these American cars: A....n, D.....g, H.....e, R.....r.
3. Name two American passenger cars that were named after famous auto man R. E. Olds.
4. What is the name of the present-day car that was originally put out by a large carriage and wagon builder?
5. Which one of these cars had an air-cooled engine: Briscoe, Chandler, Franklin, Locomobile?
6. You ought to be able to supply the tag end of these hyphenated cars: Haynes....., Pope....., Stevens....., Stoddard.....
7. Can you recall the popular names of these automobile events in the early 1900's: Algonquin, Glidden, Watkin's Glen
8. Most speedometers on early cars were connected with: (1) the drive shaft, (2) the differential, (3) the right front wheel.
9. Which one of these fine cars used a front-wheel drive on some models: Cad-

illac, Cord, Packard, Pierce-Arrow?

10. Which one of these famous sports cars was American made: Bentley, Morgan, Simplex, Talbot?

11. Still thinking about sports cars, which one of these American cars *wasn't* a sports car: Duesenberg, Mercer, Stutz, Winton?

12. These old-timers are listed alphabetically. You list them in the order of their approximate cost: Franklin, Grant, Maxwell, Pierce-Arrow.

13. The famous "Selden patent," on which most car makers paid a royalty until it was voided after a lawsuit by Henry Ford covered: (1) a floating-type carburetor, (2) the use of internal combustion engine in a vehicle, (3) a planetary transmission.

14. Which one of these cars used a sleeve-valve engine: Elmore, Mitchell, Moline-Knight, Saxon?

15. These advertising slogans have been used for many years. Tie them up with the right cars: (1) Ask the Man Who Owns One, (2) Standard of the World, (3) When Better Cars Are Built Will Build Them.

(For the answers, turn to page 90)

NOW! YOU SAVE UP TO 50% on AUTO PARTS, ACCESSORIES

EVERYTHING you need for your car—50,000 items including thousands of **HARD-TO-GET PARTS** plus many unusual accessories offered for the **FIRST TIME—all at wholesale prices!**

LOOK! Just a few
of the 50,000
Sensational Values in this Catalogue



Limited
Time Offer!
Rush Coupon
Today!

**GIANT
CATALOGUE →**

Just off the Press

124 illustrated pages, jammed with 50,000 automotive items at wholesale prices. Value \$1.00. For limited time only, it can be yours for just 25c—which will be credited on your first \$5.00 order. It's like getting this valuable bargain packed catalogue **FREE!** Send today for YOURS.

J. C. WHITNEY & CO.

1917 M-32 Archer Ave., Chicago 16, Ill.

Take advantage of this big opportunity to get *everything* you need for your car—even many hard-to-find parts and accessories you can't buy in stores! You can get them at wholesale prices—save up to 50%. You'll find these 50,000 thrilling bargains described and illustrated in a giant new wholesale catalogue, jam-packed with exciting values.

**Biggest, Most Complete Line in All
America for Cars, Trucks, Taxis ...
from the oldest to latest models**

In this amazing catalogue you'll find a big choice of automotive accessories and parts—*everything* you want. Also thrilling values in custom-styling accessories—high-speed parts and accessories to soup up stock engines for top speed, acceleration and economy. Catalogue also includes new style Hollywood accessories different from anything you've seen in stores. Other exciting buys at wholesale prices include:

- Auto radios
- Mufflers and pipes
- Custom-styling accessories
- Engines and parts
- High speed equipment
- Transmissions and parts
- Tires and tubes
- Tools
- Body parts
- Radiators
- Springs and shocks
- Ignition parts

New, used, rebuilt parts and accessories for all makes, years, models of all autos, trucks and taxis.

**Exciting get-acquainted
FREE GIFT OFFER**

Amazing, valuable new scientific check chart that shows you exactly how to know if your car is safe—sent as a **FREE GIFT** with every catalogue. It explains how you can easily make your car safe. Offer limited, so rush coupon today.

MAIL THIS COUPON TODAY!

J. C. Whitney & Co.
1917 M-32 Archer Ave., Chicago 16, Ill.

Please rush me your giant catalogue that describes 50,000 automotive items I can get at wholesale prices. I enclose 25c to cover part of cost—which I understand will be credited to me on my first \$5.00 order.

Name.....

Address.....

City.....Zone.....State.....

MIDSUMMER SPECIALS!

FLARE TYPE FENDER SKIRTS

Custom built, of heavy gauge steel, durable, concealed rubber beading, sets tight. Easy to install. For most cars, pr.

8.45



HOLLYWOOD DEEPTONE

DUAL MUFFLER SETS—FORD-MERC.

1949 up. Complete ready to install... **17.95**

A complete stock at low prices!

EXHAUST HEADER SETS

FORD & MERCURY (Complete with mufflers, ready to install)...

35.95

"JET" EXHAUST CUTOUT

Will fit all cars... only

3.25

Genuine CONTINENTAL

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For FORD 1949-53
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Except 1952-53 models

choice of 4", 5" or 6" drop

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Buick Road Test

(Continued from page 29)

How does the Buick Super stack up stylistically? Basically unchanged since 1950, the Buick body is still graced by the familiar, distinctive "sweeppear" along fenders and doors.

Borrowing liberally from the XP-300, Buick stylists have combined headlights and parking lights into one egg-shaped unit, a design not pleasing to many tastes, but rapidly gaining popularity in custom and "dream car" creations.

Other XP-300 reflections can be seen in the front bumper guards, which, although altered, have been freely taken from the 300's rear bumper. By adding another light, an extreme angle, and a little imagination, the bullet-shaped taillights take on the appearance of another GM experiment, Le Sabre.

It is interesting to note that after mounting parking lights in the bumpers for three years, Buick designers have moved them up and away from the bumper and grille. Perhaps after building massive bumper guards around the lights, and recessing them to the point of obscurity, they still found lens-loss to be high. However, back-up lights are still mounted in the rear bumper guards, which may take less beating than those in front.

Is the engine easy to service? Now that we're in the age of short, squat V-8s and power-driven equipment, working on an engine is becoming a problem. Disgruntled mechanics claim an engineering degree is necessary equipment just to find the dipstick on some new cars; but not so with the new Buick. MT's test car was fitted with power steering and windshield washers, but adding these accessories did not hamper engine accessibility. Air ducts, which could take up usable space, are neatly incorporated into splash pans, with the heater hose tying in directly to the bottom of the radiator.

Spark plugs are easy to reach, but require removal of the two-bolt cover on each head. Valves, because of their vertical-overhead position, are easily accessible after conventional rocker-arm covers are removed. Buick's 12-volt battery, installed only on the Super and Roadmaster series, is in a quick-check position at the left front of the engine.

Has Dynaflo been improved this year? Criticisms of Buick's transmission (a torque-converter unaided by an automatic gearbox) have been poor gas mileage, excess engine revolutions at low speeds, and slow pickup. Buick, with the new Twin-Turbine Dynaflo, has done much to correct these faults. Torque multiplication has been increased nearly 10 per cent, while engine speed has been reduced 200 rpm during initial takeoff and acceleration.

A boost in performance is accomplished by the addition of a secondary turbine and a planetary gear set which increases the torque multiplication from 2.25:1 to 2.45:1. The first turbine drives the ring gear of the converter gear set, which is connected to the output shaft following planetary gearing. The carrier and second turbine assembly is splined to the output shaft.

The first turbine delivers all the driving

torque (multiplied by the planetary gearing) during the starting period. As car speed increases, driving torque from the first turbine diminishes, and torque output from the second turbine increases. When the car reaches cruising speed, a smooth transition has taken place and the second turbine is doing all the driving, leaving the first turbine free-wheeling.

How good is Buick's torque-converter?

Because of the complete absence of actual gear-shifting, Dynaflo gives no jerking motion or audible signs of gear changes as found in Hydra-Matic and others, or in semi-automatic overdrive. Unlike Dual Range Hydra-Matic, Dynaflo has only one gear range suitable for average driving speeds. Although an alternate gear range would make Dynaflo more effective, especially in hilly areas, it would increase manual operation by additional use of the gear selector, and make the transmission less automatic.

A feeling of free-wheeling still exists in the Dynaflo-equipped Buick. Fast forward motion cannot be checked by gearing down except at low speeds, when the LOW range can be utilized. This gear, termed an "emergency low" range by Buick handbook writers, gives plenty of power under severe driving conditions, but it is geared entirely too low for practical use as in mountain driving, where it is desirable to have adequate engine braking as well as climbing power over a wide range of speeds.

While the whirring sound is still there, and slippage is a necessary evil of Dynaflo, pickup has been improved. Acceleration is unsurpassed for smoothness, and the new Super, while not a bombshell, will shock many diehard hand-shifters, digging as it does from 0 to 60 in 14.9 seconds. Fuel consumption is not outstanding at moderate speeds, but it has improved with the new powerplant and double-action Dynaflo.

What does the '53 Buick offer the present Buick owner? If you're accustomed to your Buick's sponge-rubber ride, you will notice a difference in riding quality in the '53. You'll notice a change in driving ease and comfort, and where you may have been looking forward to a change in body design, you will see only a new treatment in the headlight mounting, and new taillights.

On the other hand, you will enjoy mechanical changes introduced this year. The power and pickup of the '53 Buick will please you if you are looking for liveliness.

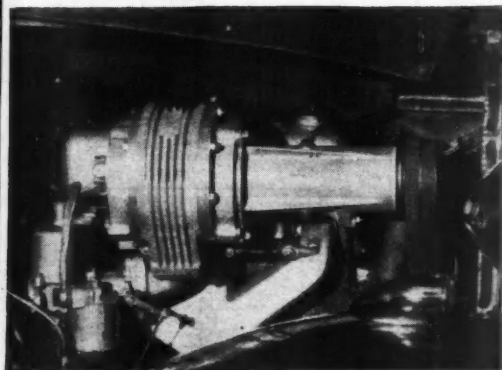
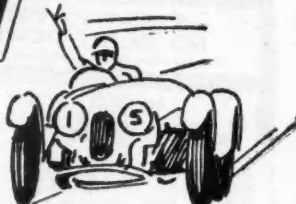
Is Buick's 50th year its best? No car strikes a perfect compromise between economy, performance, and comfort, but Buick has a good potential in the '53 Super. Buick should be proud of its engine. The design is good, and it gives smooth, quiet operation. As for future styling, there are many features on the XP-300 that are still untouched.

Buick, in the past, has been a leader. With very few improvements, it can top some of its GM stablemates in many respects. We feel that Buick, celebrating its Golden Anniversary this year, is just on the threshold of the best part of its career in the automotive world. Look for a bright future for the Buick V-8. (For The Story in Figures, see next page.)



Top-Flight

**PERFORMANCE
ON SPEEDWAY OR HIGHWAY**



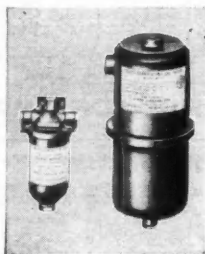
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You will get a new thrill out of driving your MG sports car after you install a SHORROCK Supercharger. This modern fuel and air mixer makes possible increases in brake horsepower of as much as 30% to 50%, depending upon the type of engine. These remarkable increases in power are obtained with only a 6 or 7 pound boost in air pressure... The extra power is available at all speeds and is achieved silently and dependably without impairing the reliability of the car in any way... Because it makes available at low engine speeds the power that formerly could be obtained only at high revolutions per minute, the Shorrock Supercharger not only reduces engine wear but assures smoother high-gear performance.

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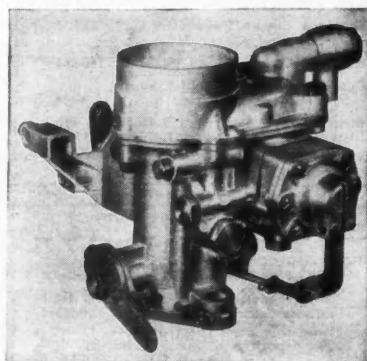


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1952-3 Olds...88.45 ☐

1952-3 Olds...98.45 ☐

1953 Buick... 99.45 ☐

1952-3 Lincoln 134.45 ☐

1952-3 Merc... 99.45 ☐



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15" & 16", stainless steel (Calnear) with anti-theft locking device. Set of 4 \$59.45 ☐



FLARED FENDER SKIRTS

Ford 49-51 cut dn.11.45 ☐ Custom deluxe

Ford Merc. 52-53 11.45 ☐

Mercury 49-51...12.45 ☐

Willis 52-53...15.45 ☐

Ply.DeSoto,Chrys. 53...11.45 ☐

52-3 Nash Rambler (Non-flare type) 15.45 ☐

40-3 Buick cust. 13.45 ☐



Deeptone Mufflers (all cars)... 5.85 ☐

Deeptone Custom headers... 22.45 ☐

('42-'52 Ford-Mercury)

Deeptone Cad. V-8 Dual set... 34.45 ☐

Dual Flow Split Manifold Exhaust Systems (1937-52 except conv.)... 38.45 ☐

Bermuda Ding Dang Bell 8.45 ☐ MG Wheel Discs 22.45 ☐ MG Metal Tire Cover 12.95 ☐

Cad. type Full Wheel Covers, set of 4 12.45 ☐

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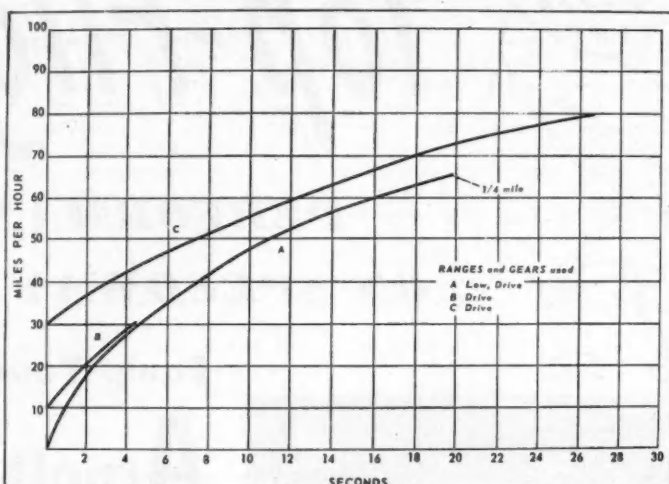
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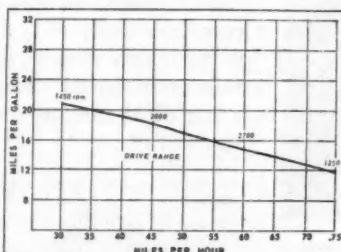
Make of Car Year Model Body Style

THE STORY IN FIGURES

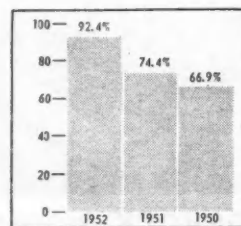
1953 BUICK SUPER (Equipped with Dynaflow)



ACCELERATION



FUEL CONSUMPTION



DEPRECIATION

PERFORMANCE

DYNAMOMETER CHECK

RPM	MPH	ROAD HP
1900	22	73
2500	31	84
3100 (maximum)	70	96

ACCELERATION (SECONDS)

(Checked with fifth wheel and electric speedometer)

Standing start 1/4 mile (69.5 mph)	19.9
0-30 mph (0-35, car speedometer)	4.6
0-60 mph (0-67, car speedometer)	15.6
10-20 mph (DRIVE range)	1.9
20-30 mph (DRIVE range)	2.5
30-40 mph (DRIVE range)	3.0
40-50 mph (DRIVE range)	4.1
50-60 mph (DRIVE range)	4.9
60-70 mph (DRIVE range)	5.8
70-80 mph (DRIVE range)	9.3

TOP SPEED (MILES PER HOUR)

Clocked speeds over surveyed 1/4 mile)

Fastest one-way run	104.5
Slowest one-way run	100.0
Average of four runs	102.7

FUEL CONSUMPTION (MILES PER GALLON)

(Checked with fuel flowmeter, fifth wheel, and electric speedometer)

Steady 30 mph	20.4
Steady 45 mph	17.9
Steady 60 mph	14.5
Steady 75 mph	11.7
Traffic	11.7

BRAKE STOPPING DISTANCE

(Checked with electrically actuated detonator)

30 mph	41 ft. 11 in.
45 mph	109 ft. 1 in.
60 mph	190 ft. 10 in.

GENERAL SPECIFICATIONS

ENGINE

Type	Overhead valve V-8
Bore & stroke	4.0 x 3.2
Stroke/bore ratio	0.80:1

Compression ratio

8.0:1

(Dynaflow)

Displacement

322 cu. in.

Advertised bhp

164 @ 4000 rpm

(Dynaflow)

170 @ 4000 rpm

Piston travel

2133.3 ft. per min.

@ max. bhp

5.528

Bhp per cu. in.

(Dynaflow)

Maximum torque

286 lbs. ft. @ 2200 rpm

(Dynaflow)

292 lbs. ft. @ 2200 rpm

Maximum bmep

133.95

(Dynaflow)

136.6

DRIVE SYSTEM

Transmission

Synchromesh standard;

Standard gearbox

test car equipped with

Twin-Turbine Dynaflow

(optional)

Ratios:

1st 2.39; 2nd 1.53;

3rd 1.0; Reverse 2.5

LOW, 1.82 x converter

ratio (2.45 maximum at

stall); REVERSE, 1.82 x

converter ratio

Semi-floating, hypoid drive

Rear axle

Ratios:

Conventional

Dynaflow

3.9

3.6 (3.2 optional)

DIMENSIONS

Wheelbase

125.5 in.

Tread

60.0 in. front, 62.5 rear

Wheelbase/tread ratio

2.09:1

Overall width

79.9 in.

Overall length

211.6 in.

Overall height

62.8 in.

Turning diameter

39.5 ft.

Turns lock to lock

5 1/4

Weight (test car)

4300 lbs.

Weight/bhp ratio

26.2:1

Weight distribution

Front 54.1%, rear 45.9%

Weight/sq. in.

20.7 lbs.

Brake lining

Tire loading (% of

recommended maxi-

Front 83.5%, rear 70.6%

PRICES

(All prices are factory delivered prices and include retail price at main factory, provisions for federal tax, and delivery and handling charges, but not freight.)

	Special	Super	Road-master
four-door sedan	\$2255.32	\$2629.17	\$3254.36
two-door sedan	2196.88		
Convertible	2553.17	3001.59	3505.56
Hardtop coupe	2295.43	2610.56	3358.05
Station wagon		3429.73	4030.73

ACCESSORIES

Twin-Turbine Dynaflo	\$192.50
Power steering	177.40
Power brakes	35.19
Heater	67.26
Radio	91.72
Windshield washer	9.19
Tinted glass	32.30

SAFETY CHECK

DRIVER SAFETY:

	YES	NO
Blind spot at left windshield post at a minimum?	X	
Blind spot at rear vision mirror at a minimum?	X	
Vision at right rear satisfactory?	X	
Windshield free from objectionable reflections at night?	X	X
Dash free of annoying reflections? Left side of dash free of low projections?		X
Cigarette lighter, ashtray and glove compartment convenient for driver?		X

DRIVER AND PASSENGER:

Front seat apparently locked securely at all adjustment points?	X	
Metal strip eliminated between front quarter window and main door window?		X
Rear view mirror free of sharp corners?	X	X
Right side of dash free of projections?		X
Adequate shock-absorbing crash pad?		X

REAR SEAT PASSENGERS:

Back of front seat free of sharp edges and projections?		X
Rear interior door handles inoperative when locked?	X	
Adequate partition to keep trunk contents out of passenger compartment on impact?		X

(MOTOR TREND constantly improves its test procedures. Because of this, we no longer use percentage ratings on the Safety Check. This avoids seemingly inaccurate comparisons between cars from month to month.)

OPERATING COST PER MILE

(In this portion of the test table, MOTOR TREND includes those items that can be figured with reasonable accuracy on a comparative basis. The costs given here are not intended as an absolute guide to the cost of operating a particular make of car, or a particular car within that make. Depreciation is not included.)

Cost of gasoline	\$167.49
Cost of insurance	128.60
Maintenance:	
Wheel alignment	4.90
Brake refine (front only)	12.83
Major tuneup	7.20

(Labor only; includes: clean and adjust or renew points and plugs; adjust spark timing, carburetor, valves, fan belt, and generator; clean air cleaner, battery terminals, and fuel lines; check coil, condenser, vacuum control, heat control, compression, and vacuum; tighten cylinder head, manifolds, and hose connections.)

Automatic transmission (change lubricant)	\$4.75
First year operating cost per mile (based on 10,000-mile annual average)	3.1c

MAINTENANCE AND REPAIR COST ANALYSIS*

(These are prices for parts and labor required in various repairs and replacements. Your car may require all of them in a short time, or it may require none. However, a comparison of prices for these sample operations in various makes is often of pertinent interest to prospective owners.)

	COST	LABOR
Distributor	\$19.29	\$ 2.40
Battery	20.95	1.75
Fuel pump	17.50	5.60
Fan belt	2.22	1.20
Valve grind	5.30	30.00
One front fender	46.45	17.00
Two tires	56.20	
One bumper	48.49	5.50
TOTALS	\$216.40	\$63.45

*Figures given in this issue are the first available 1953 charges, which appear higher for all makes than the 1952 figures in previous issues.

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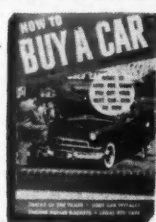
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Also featuring the knock-off bar is our Full Wheel Ripple and Flat Continental style discs at the same price.

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THE USUAL COST!

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- ☐ All Other V-8 Cars, Set.....\$7.75
- ☐ All 8 Cyl. Inline Cars.....\$8.95
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Make, Model & Year of my car is:

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FREE INFORMATION

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Milford 717, Pa.

How to Restore a Classic

(Continued from page 53)

to fan belts on classic cars. As a general rule, a fan belt should be just tight enough so that it does not slip.

The cooling system requires less attention than any other system found in the internal combustion engine. It is simple to maintain, but if it is abused, it can ruin the finest of engines.

(c) *Drive Train.* If you drove your car prior to disassembly, you know the general mechanical condition of the drive train. Even if the gears were quiet, check for excessive play by jacking up the rear wheels and turning the driveshaft by hand. If the shaft is enclosed, leave the car in gear, jack up one wheel and rotate it. If excessive play is not evident and the drive train originally sounded good, drain, flush, and refill the transmission and differential (following the manufacturer's recommendations) and pack the universal joints if they are the type that can be packed. Of course, a defective unit should be disassembled and repaired.

(d) *Brakes.* Reline your own brakes. Wheel cylinders and the master cylinder deserve particular attention, and honing and rebuilding them is both simple and interesting. It is wise to replace all flexible hydraulic lines with new, modern parts, for a defective brake hose can cause a proud radiator screen and headlights to deteriorate in less time than it takes to read this sentence! Flush out all metal brake lines before refilling and bleeding the system.

(e) *Chassis and Running Gear.* Springs, steering gear, kingpins, shackles, and other running gear should be overhauled by the owner. Though they present heavy mechanical problems, they are easy to cope with. Wheel alignment requires special equipment and should be performed after all other work, including the installation of permanent tires, is completed. *Caution!* Owners have seriously injured themselves when replacing or removing springs, especially when using a spring spreader. If you haven't worked on springs, have the job done for you, for safety's sake.

(f) *Accessories.* Inspect the starter and generator and install new brushes if necessary. If an armature is badly grooved, send it out for repair. Sandstone will do the job when the commutator is dirty but otherwise in good condition. Carburetors and distributors should receive attention from qualified specialists, for metering adjustment, point synchronization, and cam dwell adjustment all require special equipment. Fuel pumps should be checked for ruptured diaphragms and output pressure, bearing in mind that replacement of a mechanical pump with an electrical one is often advisable, and always permissible from a purist standpoint. The coil, plugs, fan belt, ignition wire, and water hoses should be inspected and replaced if necessary. If the gas tank is defective, take it off and have a tank shop clean and weld it. Most accessories are costly to repair, but

often you can replace them with modern units without decreasing the value of the car. As an example, certain late model carburetors can be calibrated for classic; if the job is done properly, they will outperform the original unit. The same is true of distributors, coils, and other units. Replacement of the headlights with sealed beam units is verboten, however, for this destroys the original appearance of the car. Most plating shops can resilver the original lights. When refinished and properly adjusted, they throw a beam sufficient for most driving conditions.

STEP 8. *Body Restoration.* No matter how well a car runs, it is just another old car to most people if it looks bad. Friends and the public will be more critical of body restoration than mechanical restoration, so pay particular attention to details of the body. Body work should be started after all mechanical and electrical restoration is completed. Experiment first on a small section of a fender if you are new to metal work, for inexperienced hands can stretch metal and cause body ripples that are worse than leaving the damaged part alone. Sections of the body that are rusted beyond repair can be cut out and replaced with new metal. This, too, is a ticklish job. If body work is farmed out, do not permit the shop to use lead and putty for the repairs. Lead and putty have an annoying habit of chipping and peeling when least expected, and then the car has to be painted all over again. Color matching is annoying and often unsuccessful. A competent body man can shape metal without lead and putty, but this caliber of work is more expensive. With rare exceptions, the application of foreign material to metal (exclusive of primer) is a shortcut designed to save time. It is generally apparent to the eye and has no place on a well-restored body.

(a) *Paint.* It is generally advisable to repaint a classic in the original color. This is not a steadfast rule, however, and various suitable shades may be used to improve the illusion created by the body design. If you aren't a professional painter, you can still save *mucho dinero* by sanding, preparing, and masking the car, leaving only the actual spraying to an experienced painter. Enthusiasts are still involved in the controversy over whether to paint with lacquer or synthetic paint. A good lacquer job costs from two to six times as much as a good synthetic job and presents a deeper, smoother, and more expensive-looking finish. It chips more easily, however, and requires more attention. The type of paint you should use is largely a matter of preference and how much you have in the bank. Just in passing: a good painter can apply synthetic paint so that it is difficult to distinguish it from lacquer.

The most important part of any paint job is the preparation, for if the surfaces are rough, the finished coat will be rough. "Feather-edge" small nicks so they won't

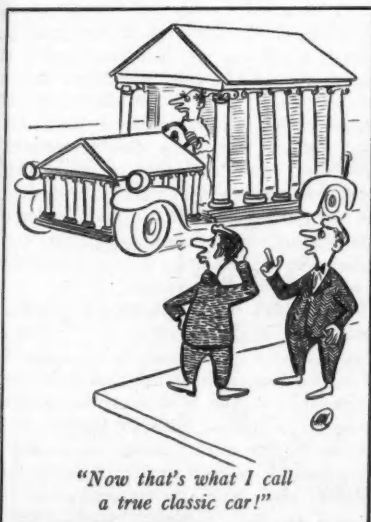
show under the new coat. Especially bad surfaces may have to be sandblasted, but this requires a lot of subsequent filling and priming, so avoid it if possible.

Most enthusiasts run into trouble in preparing and painting aluminum. With the exception of initial preparation, an aluminum panel is no different from a steel panel. Bare the aluminum either with a good paint remover or by sanding. After removing the old paint, apply a good metal cleaner or rust remover (even if the metal looks clear) and allow it to dry for several hours. Carefully sand the panel, and fill body imperfections with a good grade of filler coat. When the panel is dry, sand it again with wet sandpaper. Then spray the surface with zinc chromate and let it dry for at least 24 hours. Sand with the finest wet sandpaper obtainable, spray on the lacquer primer, and finish as you would a steel panel.

(b) *Upholstery.* Even a novice can re-tie springs and make himself useful where upholstery problems are involved. Most classics have a great deal of leather which can be cleaned, softened with neats-foot oil, and re-dyed. As hides are expensive, a professional upholsterer should replace leather. To reduce initial costs, many collectors use seat covers at first and recover only the exposed door and body panels. *Caution:* Nothing depreciates a classic as much as replacing real leather with imitation leather. Money invested in leatherette is wasted. It is cheaper to use seat covers as a substitute while saving green stuff for genuine leather.

(c) *Convertible Tops.* It's easy for an owner to restore top bows, but installation of the top itself is a job for a professional. Choice of color and fabric depends on you, though certain enthusiasts insist that the top be the original color. To avoid overspray, tops should be installed after the car is painted (despite the wails of the top man). Prices for good tops vary throughout the country and vary also according to the material used and the work involved. In Southern California, excellent tops are installed for \$55 and up (mostly up).

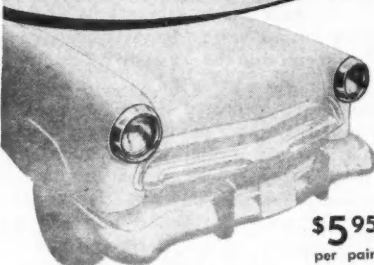
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		Packard	1948-52

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Mercury	1941-50	Plymouth	1949-53

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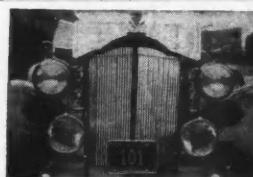
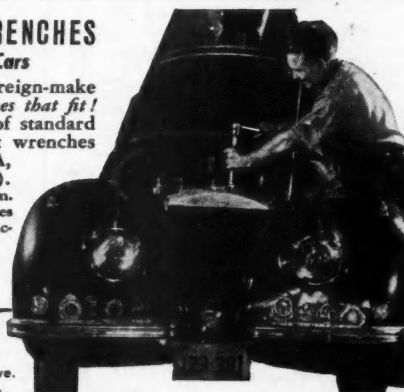
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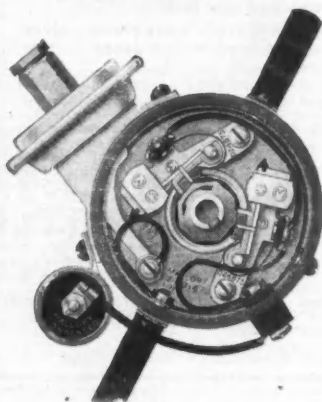
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HONEST CHARLEY SPEED SHOP
Box T 3086, Chattanooga, Tenn.

Chevrolet Road Test

(Continued from page 33)

curve at high speeds due to aluminum pistons (19 vs. 31.5 ounces for cast-iron). By the time we reached our speed course, a fair crosswind was blowing, and during the four runs (two in each direction), there was noticeable wind wander; but with normal correction, the car was brought under control.

Driving back over our mountain test route, which has 50 miles of all types of up-and-down curves, the car handled as easily as last year's Chevrolet.

Could you stop the car easily? Definitely! On our way down a mountain the brakes were used hard, and confirmed the good impression we got during the brake checks. Little pedal pressure was required for maximum effect. The amount of fade was normal, and the feel of the brakes gave us confidence that with a full passenger load there would be reserve pedal during a fast, hard stop.

Brake stopping distances were shorter than with previous models, and the brakes felt good. This is an improvement, considering the car's increased weight. Chevrolet's emergency brake, a pull-out, T-type, is to the right of the steering column and within reach of the passengers.

Did the '53 Chevrolet "scat"? Comparing with the '52 Chevrolet Powerglide, the '53 accelerated from 10 to 60 in 19.9 seconds vs. last year's 21.7; 30 to 60 in 13.6 vs. 16.1. Considering the 250 pounds more weight, this is pretty good. Looking for the reason for the 0-60 standoff, it appears that 2.2 torque multiplication last year vs. 2.1 in '53 gave better dig in the 0 to 10 mph range.

From LOW to DRIVE at 4000 rpm (47-48 mph) gave the best results for acceleration, as it did on last year's car. Pickup for passing at legal highway speeds is adequate; but in the 70 mph range or on a moderate grade there is not much pickup left. Below 40 mph, automatic kickdown to LOW range is available with high engine revolutions and—when nearing 40—what feels like a good deal of wasted effort on the engine's part.

Was the fuel accent Scotch? It did roll its R's some, and, compared to last year's figures, showed a gain of approximately one mpg at 45 mph, and a gain of two mpg at 60 mph. At a steady 30 mph and in traffic, fuel consumption remained about the same as in '52. Taking into consideration the fact that this year's car is 250 pounds heavier than the '52 (due mainly to a stronger and heavier body) and develops an added 10 bhp, the increase in fuel economy shows that the engineers steadily improve their product (regardless of an occasional disparaging remark to the contrary).

What does Chevrolet offer for easy, simple operation? Naturally Powerglide is the No. 1 feature for easy driving,

but Chevrolet has gone a step further by offering power steering on all its models.

For really lazy driving, Chevrolet also provides the Autronic Eye—the automatic headlight dimmer—at extra cost, and an easy-to-tune radio (one of two models available) that takes the work out of finding the strongest stations in the immediate area. This radio, controlled either by a selector bar or a foot switch, has a "brain" that picks out the stations producing the strongest signal. The driver can select the signal strength above which the radio automatically tunes in all stations in sequence.

Power steering, the Autronic Eye, and accessories like the station selector radio are devices previously found only on higher priced cars. Chevrolet has brought them to the low-price class. All this optional equipment at extra cost will, of course, raise the low-priced car up a notch. **Is power steering worth its price on a lighter car?** The same type as that used on the more expensive GM products, Chevrolet's power steering still retains a fair amount of steering feel, with a seven-pound effort required to actuate the power steering assist mechanism. Our test car, a Two-Ten four-door sedan, was equipped with power steering, but due to improper adjustment of the steering gear, it required more effort to actuate the power unit than it did to turn the wheel after the unit took over. We have driven quite a few GM cars equipped with power steering, and when they are properly adjusted, we have no serious criticisms with the system. However, taking all things into consideration, it is our opinion that on lighter cars there is less need of power steering than on heavier ones having considerably greater tire tread area and, of course, heavier engines.

How did the Chevy hold together during the testing? Besides the regular test run to Indio, Calif., the MT Research staff all take a turn at the wheel of each test car. Considerable mileage over all types of roads and by different drivers usually results in some service being required on a car at the end of a test. The Chevy didn't require this. Nothing fell off (such as knobs, trim, etc.)—indicating that our test car, at least, is a durable vehicle. Freedom from annoying minor adjustments and service is a trait to be desired in any car. If our test can be considered an indication of durability of the car, Chevrolet will maintain its reputation for producing durable vehicles.

Do you think the '53 Chevrolet is a good buy? Yes, we do. Chevrolet, with its three models and available optional equipment, covers a wider price range than formerly. From one of the least expensive in the low-priced field of full-sized cars to well into the medium group, Chevrolet's models will intrigue many potential car buyers with their new features.

(For The Story in Figures, see page 72.)

IS YOUR CAR a LEMON or a PEACH?



John Harrington
Research Director
Autosphere Corp.

NEW DEVICE GIVES YOU ANSWER AT A GLANCE!

How much have you got invested in your car? \$1,000, \$2,500, \$3,000, \$4,000, More? Do you know if you are *getting* what you paid for? In short, have you got a "lemon" or a "peach"? No matter what anyone may tell you, no matter what any manufacturer may say (and no matter how much time and cash you put into speed equipment) there is only

one way to get the answers about *your* car. And that way is by road testing and "road watching" the performance factors of your car. And the good thing is this — if your car does not "deliver" what it should and what you paid for, *you can correct the trouble IF you know what that trouble is.* Indeed — you CAN make a peach out of a lemon!

Perfometer Protects Your Investment and Gives You Satisfaction of Top Performance

We have developed a unique and exclusive instrument (*NOT* a vacuum gauge) which makes it simple for anyone to actually find the precise answers about the following performance factors:

1. Your car's actual road horsepower at any speed. (Only such on the car instrument!)
2. Condition of your engine as revealed by pulling (work) power.
3. Acceleration rate of your car in any gear.
4. Precise safety condition of your brakes.
5. Number of feet required to stop your car at any speed.
6. Best gasoline to use for your car's peak performance.
7. Whether wheels and chassis are in proper alignment.
8. Scientific determination of when you have reached end of new car break-in period.
9. Hill climbing ability—exact road grades.
10. Results of any mechanical repair job done on your car.
11. Causes of any engine troubles.
12. Amount of internal and external resistances to speed and power.



Actual photo of instrument mounted on steering column.



Actual photo of instrument mounted on dash.

For Normal Car Use

The Perfometer not only tells you if your car is really giving you peak performance on the factors above, it actually tells you **WHAT** is the cause of poor performance so that you can correct it. You can check **EVERYDAY** as you drive and be warned of any trouble in the making. Saves on expensive repairs, increases safety and gives you real pleasure of driving car in peak condition.

New Easy to Read Dial

The dial of the new Models 410 and 330 have been designed to quickly show at a glance as you drive whether or not your car is operating properly and safely. By merely watching your needle pointer you can easily see, for example, if your front wheels are out of alignment; if you have dragging brake shoes; if your brakes are in need of adjustment or relining; if your engine is delivering maximum output; if you have faulty lubrication; and many, many other important conditions of your car.

No Connections to Make—Quality Made

There are absolutely no connections to make to engine, transmission or any place else! Instrument is quickly mounted to steering column or dash with chrome mounting kits provided for **BOTH** locations. It is made by European craftsmen with the integrity and precision of a jeweler's movement.

Free Book Gives Complete Information

Space prevents a complete description of what this remarkable test instrument will do. With each instrument you receive complete data on exactly what your car's dial readings should be for every factor. Also you get comparative test data on all major U. S. and foreign cars.

How It Works

Engineers have used and acclaimed the Perfometer. Yet, it operates by simple principle of gravity. All major car manufacturers have purchased Perfometers for their research staffs. To get the basic operating idea, just visualize a pendulum hanging in your car. When you step on the gas, force of gravity pushes pendulum back. When you step on brakes, same force pushes pendulum forward. These two basic motions are translated to simple dial by an **AMAZING CALIBRATION SYSTEM**. For the technically minded, the handbook that comes with each instrument contains complete engineering data.



Step on the gas, the pendulum swings backward. The amount it moves is indicated on dial and gives car performance and power.

Step on the brakes, the pendulum swings forward. The amount it moves is indicated on dial and precisely shows condition of brakes.

Unconditionally Guaranteed

All major U. S. motor magazines have tested and reported on the Perfometer. You can try it at no risk because it is **UNCONDITIONALLY GUARANTEED** to satisfy or your money will be promptly refunded. TO DATE NOT ONE SINGLE REFUND HAS EVER BEEN REQUESTED BY ANYONE! THOUSANDS IN USE.

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11 East 48 Street, New York, N. Y.

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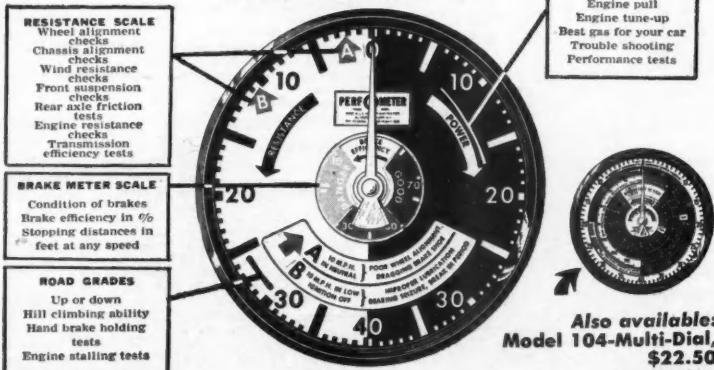
City

State

Zone

☐ Send C.O.D., I will pay postman price plus postage charges. It is understood that the Perfometer is **UNCONDITIONALLY GUARANTEED**, if not satisfied you will promptly refund the full purchase price.

Model 410 & Model 330



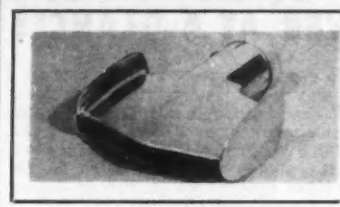
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POWER + ECONOMY



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\$5.00
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Have some REAL FUN with your car. With AUTO-SHOCKO you can give anyone who touches the outside surface of your car a HARMLESS, but VERY EFFECTIVE shock. When the AUTO-SHOCKO switch is on, the entire outer surface of the car becomes charged. You can also charge your buddy's car by touching your bumper to his. Then he won't be able to get into his car until you turn off your switch. Can also be left on while car is parked to keep vandals from scratching or damaging your car. Will not run down your battery. AUTO-SHOCKO is probably the best FUN MAKER you will ever own. Available for 6 or 12 volt systems (please specify). Easily installed in a few minutes. Sent complete with AUTO-SHOCKO unit, wire, switch, etc. Price \$9.95 postpaid, or if C.O.D. plus postage—\$1.00 deposit required on C.O.D. orders. (Dealer inquiries invited)

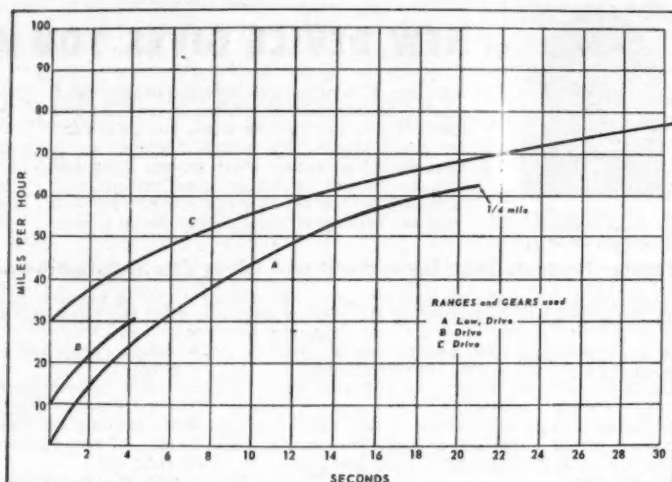
MORBARCO MANUFACTURING CO.

Dept. M-12, 192 Arlington St., Lawrence, Mass.

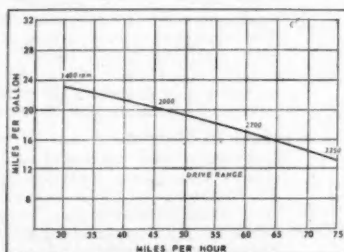
Seventy-two

THE STORY IN FIGURES

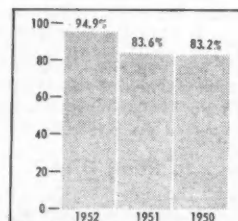
1953 CHEVROLET TWO-TEN (Equipped with Powerglide Transmission)



ACCELERATION



FUEL CONSUMPTION



DEPRECIATION

PERFORMANCE

DYNAMOMETER CHECK

RPM	MPH	ROAD HP
1550	16	33
2000	40	52
3000	71	72

ACCELERATION (SECONDS)

(Checked with fifth wheel and electric speedometer)

Standing start 1/4 mile	21.0
0-30 mph (0-32, car speedometer)	5.8
0-60 mph (0-64, car speedometer)	19.4
10-20 mph (DRIVE range)	1.9
20-30 mph (DRIVE range)	2.6
30-40 mph (DRIVE range)	3.0
40-50 mph (DRIVE range)	4.4
50-60 mph (DRIVE range)	6.2
60-70 mph (DRIVE range)	7.5
70-80 mph (DRIVE range)	13.9

TOP SPEED (MILES PER HOUR)

(Clock speeds over surveyed 1/4 mile)

Fastest one-way run	94.7
Slowest one-way run	91.8
Average of four runs	93.2

FUEL CONSUMPTION (MILES PER GALLON)

(Checked with fuel flowmeter, fifth wheel, and electric speedometer)

Steady 30 mph	23.4
Steady 45 mph	20.1
Steady 60 mph	17.3
Steady 75 mph	13.5
Traffic	15.3

BRAKE STOPPING DISTANCE

(Checked with electrically actuated detonator)

30 mph	42 ft. 0 in.
45 mph	101 ft. 8 in.
60 mph	189 ft. 3 in.

GENERAL SPECIFICATIONS

ENGINE

Type	Overhead valve, 6 cyl.
Bore & stroke	3 1/16 x 3 1/16
Stroke/bore ratio	1.11:1
Compression ratio	7.5:1
Displacement	235.5 cu. in.
Advertised bhp	115 @ 3600 rpm
Piston travel @ max. bhp	2363 ft. per min.
Bhp per cu. in.	0.488
Maximum torque	204.1 lbs. ft. @ 2000 rpm
Maximum bmep	130.69 psi

DRIVE SYSTEM

Transmission: Hydraulic torque converter with planetary gears for REVERSE and LOW.
Ratios: LOW, 1.82 x converter ratio; DRIVE, converter ratio (2.1 maximum at stall); REVERSE, 1.82 x converter ratio.
Standard transmission: Low 2.94:1; 2nd 1.68:1; 3rd 1:1; reverse 2.94:1
Rear axle: Semi-floating, hypoid drive.
Ratios:
Powerglide 3.55:1
Conventional 3.70:1

DIMENSIONS

Wheelbase	115 in.
Tread	Front 56 1/8, rear 58 3/4
Wheelbase/tread ratio	1.98:1
Overall width	75 in.
Overall length	195.5 in.
Overall height	63 1/4 in.
Turning diameter	Right 37 ft., left 38 ft.
Turns lock to lock	4 1/2
Weight (test car)	3610 lbs.
Weight/bhp ratio	31.3:1
Weight distribution	Front 55.4%, rear 44.6%
Weight/sq. in. brake lining	22.8 lbs.
Tire loading (% of recommended maximum at curb weight)	Front 94%, rear 76%

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Motor Trend

July 1

PRICES

(All prices are factory delivered prices and include retail price at main factory, provisions for federal tax, and delivery and handling charges, but not freight.)

	4-door sedan	2-door sedan	club coupe
One-Fifty	\$1556.48	\$1505.48	\$1511.48
Two-Ten	1641.48	1590.48	1607.48
Bel Air	1746.48	1695.48	-----
One-Fifty	\$1421.48	-----	-----

	convertible	sport coupe
Two-Ten	\$1947.48	\$1837.48
Bel Air	2024.48	1909.48

ACCESSORIES:

Powerglide	\$187.85
Power steering	177.55
Radio	68.50
Heater	85.50
Tinted glass	29.60
Autronic Eye	59.95
Turn signals	16.75
Windshield washer	10.10

SAFETY CHECK

DRIVER SAFETY:

	YES	NO
Blind spot at left windshield post at a minimum?	X	
Blind spot at rear vision mirror at a minimum?		X
Vision to right rear satisfactory?	X	
Windshield free from objectionable reflections at night?	X	
Dash free of annoying reflections?		X
Left side of dash free of low projections?		X
Cigarette lighter, ashtray and glove compartment convenient for driver?		X

DRIVER AND PASSENGER:

Front seat apparently locked securely at all adjustment points?	X	
Metal strip eliminated between front quarter window and main door window?		X
Rear view mirror free of sharp corners?	X	
Right side of dash free of projections?		X
Adequate shock-absorbing crash pad?		X

REAR SEAT PASSENGERS:

Back of front seat free of sharp edges and projections?		X
Rear interior door handles inoperative when locked?	X	
Adequate partition to keep trunk contents out of passenger compartment on impact?		X

(MOTOR TREND constantly improves its test procedures. Because of this, we no longer use percentage ratings on the Safety Check. This avoids seemingly inaccurate comparisons between cars from month to month.)

OPERATING COST PER MILE

(In this portion of the test table, MOTOR TREND includes those items that can be figured with reasonable accuracy on a comparative basis. The costs given here are not intended as an absolute guide to the cost of operating a particular make of car, or a particular car within that make. Depreciation is not included.)

Cost of gasoline	\$145.93
Cost of insurance	116.60
Maintenance:	
Wheel alignment	4.00
Brake reline (front only)	18.20
Major tuneup	7.20

(Labor only; includes: clean and adjust or renew points and plugs; adjust spark timing, carburetor, valves, fan belt, and generator; clean air cleaner, battery terminals, and fuel lines; check oil, condenser, vacuum control, heat control, compression, and vacuum; tighten cylinder head, manifolds, and hose connections.)

Automatic transmission (change lubricant)	\$9.79
First year operating cost per mile (based on 10,000-mile annual average)	3.0c

MAINTENANCE AND REPAIR COST ANALYSIS*
(These are prices for parts and labor required in various repairs and replacements. Your car may require all of them in a short time, or it may require none. However, a comparison of prices for these sample operations in various makes is of interest to prospective owners.)

	COST	LABOR
Distributor	\$11.83	\$ 1.60
Battery	20.95	.80
Fuel pump	15.00	1.60
Fan belt	1.82	.80
Valve grind	2.70	18.80
One front fender	24.37	17.50
Two tires	46.42	
One bumper	10.52	2.00
TOTALS	\$133.61	\$43.10

*Figures given are newly released 1953 charges.



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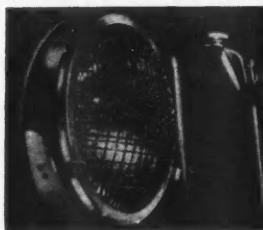
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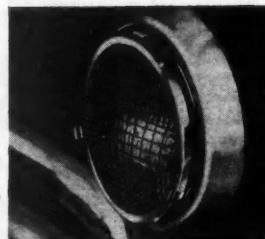
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City

Zone

State

DON'T READ THIS

(unless you want to save money)

FLARE SKIRTS



\$8.95

Ford	36-53	Ply	35-53
Mer	39-53	Dodge	35-53
Chev	36-53	DeSoto	35-53
Olds (exc. 98)	35-53	Chry	35-53
Pont	35-53	Willys	32-53
Buick	35-41, 50-53	Stude	35-52

Skirts are all steel with concealed rubber liner. The easily installed skirts are primed for paint.

POWER-TONE



Exhaust Header Sets
Ford 37-53
Mer 39-53

\$37.95

\$47.95

Dodge	53	Lin	49-51
Olds	49-53	Stude	51-52
Chev (except conv.)			37-53
Dodge 6 (except conv.)			42-53
Ply (except conv.)			42-53
Ford 6 (except conv.)			52-53

Cadillac	50-51
Lin	52-53
Chrys	51-53

\$64.95

GMC (Header Only)

Sets include headers, header extension, mufflers, tail pipe, clamps and brackets.



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Chev 49-53 \$44.95

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Indianapolis: a Recap and a Preview

By Walt Woron

IF ANYONE DESERVED a name "The Iron Man," Bill Vukovich does. The midget car race crowd long has known him as "The Mad Russian," but you can be sure his nickname is going to change.

The why of this is in the recent running of the 37th 500-miler at Indianapolis in which Vukovich led from beginning to end (except for five laps), made only three quick pit stops, and set a breakneck pace of 128.740 mph, all under a scorching sun (average air temperature 88°F with highest temperature of the track asphalt surface recorded at 132°F!).

In a race where 10 of the original drivers were replaced by one or more relief drivers, Bill Vukovich replied to the question of whether he ever felt he needed a relief driver by the simple phrase, "Naw, never."

And yet if Vukie never felt the need, he certainly didn't have much company for out of the 14 finishers, only eight cars finished with the original drivers. Of the 10 cars that used relief drivers, five used two drivers, three used three drivers, and one used four drivers. All the drivers were affected by the terrific temperature. To make it worse, their clothing was treated with a fire protection dip, which wouldn't allow the clothes to breathe properly.

To get a first-hand idea of how tough the race was, we talked to Sam Hanks immediately after it was over, but before we give you his comments, here is a bit on his race activity.

On the 140th lap, Hanks was a solid second, not threatening the leader but apparently not being pushed too strongly for his spot. Then he seemed to slow down slightly, allowing Ayulo to move by him. In third spot and on the 146th lap, he requested relief from his pit crew (indicated by tapping the top of his helmet). He took another lap, allowing Duane Carter time to get ready to replace him. When he came around the next time, he apparently had seen Ayulo signal for a pit stop, so Hanks hung on to take another lap, and still another and another one. Finally, he signalled he would take one more, then come in. He did not want to give up. Finally, on the

152nd lap, he coasted his car in.

He raised himself out of the seat, was helped over the three-foot pit wall and immediately flung himself onto the ground. Given water to drink, his head was down for more water and he was fanned in an effort to cool him off. In a few minutes he was helped to his feet and taken to the garage area. He was completely exhausted.

When we asked him what (specifically) tired him, he answered, "A combination of things. My safety belt was loose and it let me slide from side to side, so I had to hold on with my arms. This went on from the 100th lap; then there was the heat from the engine and heat from the sun. The wind buffeted me around too. It was rough. I knew if I could hang on to the 150th lap though, whoever took over for me wouldn't find it too bad. They wouldn't have to stop for fuel again after that."

As it was, Duane Carter (who relieved him) didn't have to stop again either. Hanks was in third place when he stopped and probably lost one or two places for the driver change. Carter went on to finish third, however.

"Sam," we continued, "what are some of the things you think about when you're driving? We've asked you a lot of other things during preparation time and qualifying, all of which we are going to tell our readers in the next (August) issue, so we'd like to tell them how you actually felt during the race itself."

"Glad to tell you. What do you want to know?"

"Well, how does it feel when you walked out to your car on the starting line? How does it affect you when your engine has started? What does it feel like during the pace lap? Does the thought of danger enter your mind on the first turn . . . ?"

"Wait a minute. One at a time. How much space are you going to devote to this?"

"Well, actually, Sam, all this can be a preview of what our readers can expect in the next issue if you can provide us with this type of information."

"Sure can."

And believe us, he did!

Cross-Country Test of the '53 Willys

(Continued from page 26)

but small (69 per cent the size of its competitors) powerplant. F-head designs have been practically ignored by American engine designers, although two British cars (Rolls-Royce and Rover) use them with outstanding success. The last domestic product using such a design was the Essex Four of the early Twenties. The very potent two- and four-port conversions for Model A and B Fords by George Riley were top performers in early dry lakes competition. So the engine, while new, is of a proven design: one that permits the use of relatively large intake valves, which give high "breathing" efficiency. The exhaust valves are equipped with valve rotators that greatly prolong

durability. Its brake horsepower per cubic inch output of .559 is one of the highest in the industry. The unconventional combustion chamber afforded by this design allows a compression ratio of 7.6:1 (somewhat above average), yet we found that the car gave unusually smooth performance with regular grade gasoline.

Would it be an economical car to own? Low fuel cost is the biggest factor in giving the Willys the lowest operating cost per mile (2.4 cents) of any '53 car yet tested by MT Research. This is somewhat below the Big Three average. A comparison of Maintenance and Repair Cost Analysis tables will show it about average in its class. (A true indication

of what the average depreciation will be is hard to determine as the car is just over a year old.) Local Los Angeles prices, while not indicative of the national average, indicate that it will not exceed the average of its price class.

If it's as good as you say, why doesn't it sell better? We think that there are several factors preventing the Willys from selling better than it has and does. Chief among these is the price. To the person shopping strictly for dollar price and not dollar value, it would be hard to justify paying above the Chevrolet-Ford-Plymouth average. To most people it should sell for less merely because it's a Willys, a car with relatively little reputation outside of the wartime Jeep and the pre-war economy cars (both of which served their purposes quite adequately, however). Secondly, it's smaller. Although this isn't necessarily a disadvantage, as we've pointed out, it's hard to convince people that a small car is worth as much as a larger car. Advertisements have expounded the greatly improved ride resulting from merely extending the wheelbase. Third, a shorter wheelbase leads people to believe interiors are equally smaller, although in this particular instance the fallacy of this has been proved. Fourth, it's hard for any manufacturer to buck the Big Three, with their extremely high production, regardless of how good the product is. The only practical way for Willys to get its price down is to produce more cars. With the present merger with Kaiser, this possibility may now become a reality.

Is the Willys a durable car? Will it hold up? The durability potential of the Willys appears to be good, at least as far as major items are concerned. Total mileage on this test (approximately 6000) exceeds what the average car owner will drive in six months. *Engine and chassis* required only normal servicing and were in good condition at the end of the test, except for replacement of the water system thermostat (operation had become erratic). As far as the *body* is concerned, these points were noted: the right hand front door lower seal strip came loose; one windwing was found to leak at the rear during bad rainstorms; one door latch loosened up; all door armrests were slightly loose; and the trunk latch would sometimes bind, making it difficult to close. Although such annoyances are minor and can be corrected in a matter of minutes (probably within the guarantee period), we point up these factors to give some indication of the car's possible durability.

Overall, what do you think of the car? A small, light car is usually the product of compromise. To obtain the desired results, some factors generally suffer. The Willys appears to be an exception to this rule, in that in no way is it below an acceptable standard, and in many ways is outstanding. You've heard a lot about its fuel economy being the car's top drawing card, but paradoxical as this may sound, if Willys enjoys good sales this year, it won't be because of this factor alone. Instead, it will be a combination of factors, such as good maneuverability and handling, a top ride, completely adequate performance and good economy. (For The Story in Figures, see next page.)

July 1953

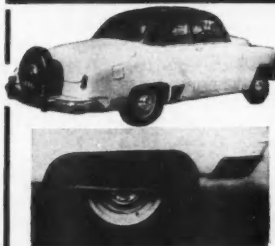
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Gane re-places the idling adjustment screw in gasoline carburetors.

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Did you know that your engine actually uses a richer gasoline mixture when you take your foot off the gas pedal than when you step on it? When your engine slows down or idles, higher manifold vacuum sucks a far richer mixture through the carburetor than needed even for fast driving. At last, engineers designed the Gane Air-Flow needle to bleed air during high manifold vacuum periods and thus try to increase gas mileage. Does it work? Of the more than 1/2 million users, some report up to 25% more mileage, faster pickup, smoother idling. But some swear at them, say: "no improvement"; and fire the "little stinkers" back to us—proving Ganes sometimes fail. That's why we invite you to TRY BEFORE YOU BUY.

**SEND NO MONEY! MAKE NO DEPOSIT!
PAY POSTMAN NOTHING!**

Just send us your name and address plus make, year & number of cylinders of your car & carburetor make (if you happen to know). Install easily in a few minutes, then check your mileage for 10 days. If you average 2 or more extra miles per gallon, send us \$1.50 per needle. If you don't, send them back & owe nothing. Write:

MEHREN INDUSTRIES
117 Mehren Bldg.
Beverly Hills, Calif.



**PREVENT ACCIDENTS—
DOUBLE BRAKE LIFE!**

Truck and fleet operators who demand the utmost in brake safety and economy have been using Brake-Life for years. Guaranteed to add 15,000 more miles to new or used linings—prevent dangerous brake fade and stop drum scoring or your money back! Save up to \$50.00 on a brake job today. It even insures quick recovery from wet linings. Brake-Life's great penetrating agents prevent lining fibers from gumming or glazing (the major cause of brake failure)! Simple to apply—just paint it on with a brush. Complete treatment for your car only \$3.95 postpaid. Order today! Send cash, check or M.O. Dealers Inquire!

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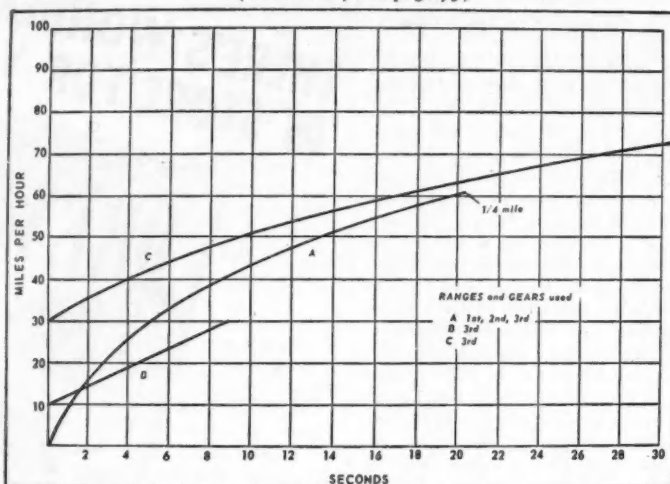
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JET-PROPELLED Car Washer**

Waterpower makes this brush WHIRL, just like it makes dynamos go round! Thick, long bristles of finest horsehair whirl away dirt, dust, road haze. 4-ft. aluminum handle has built-in regulator and shut-off. Pays for itself over and over.

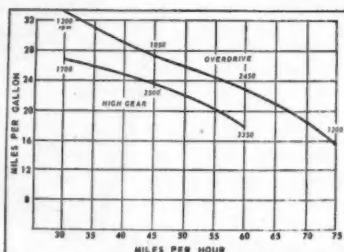
\$4.95

Young Products, Dept. 14727495 Elmhurst, Detroit 4, Mich.

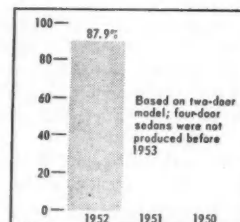
THE STORY IN FIGURES
1953 WILLYS ACE (Equipped with Overdrive)
(Continued from page 75)



ACCELERATION



FUEL CONSUMPTION



DEPRECIATION

PERFORMANCE

DYNAMOMETER CHECK

RPM	MPH	ROAD HP
1200	21	23
2000	35	38
2500	46	46
3400 (maximum)	68	58

ACCELERATION (SECONDS)

(Checked with fifth wheel and electric speedometer)

Standing start 1/4 mile	21.1
0-30 mph (0-31, car speedometer)	5.2
0-60 mph (car speedometer)	20.3
10-20 mph (high gear)	4.5
20-30 mph (high gear)	4.3
30-40 mph (high gear)	4.4
40-50 mph (high gear)	5.1
50-60 mph (high gear)	6.4
60-70 mph (high gear)	11.3
70-80 mph (high gear)	19.3

TOP SPEED (MILES PER HOUR)

(Clocked speeds over surveyed 1/4 mile)

Fastest one-way run	86.0
Slowest one-way run	81.3
Average of four runs	82.6

FUEL CONSUMPTION (MILES PER GALLON)

(Checked with fuel flowmeter, fifth wheel, and electric speedometer)

	Conventional drive	Overdrive
Steady 30 mph	26.8	33.9
Steady 45 mph	22.8	27.1
Steady 60 mph	17.9	22.7
Steady 75 mph		15.8

BRAKE STOPPING DISTANCE

(Checked with electrically actuated detonator)

30 mph	40 ft. 1/2 in.
45 mph	100 ft. 3 in.
60 mph	191 ft. 11 in.

GENERAL SPECIFICATIONS

ENGINE

Type	F-head, in-line 6 cyl.
Bore and stroke	3 1/2 x 3 1/2
Stroke/bore ratio	1.12:1
Compression ratio	7.6:1
Displacement	161 cu. in.
Advised bhp	90 @ 4200 rpm
Piston travel	2450 ft. per min.
@ maximum bhp	.559
Bhp per cu. in.	135 lbs.-ft. @ 1600 rpm
Maximum torque	126.44 psi
Maximum bhp	

DRIVE SYSTEM

Transmission	Conventional three speed and reverse using helical gears
Ratios	1st 2.60; 2nd 1.63; 3rd 1.0; Reverse 3.53
Overdrive	Planetary type with manual lockout and accelerator downshift control
Ratio	0.7:1
Rear axle	Semi-floating hypoid drive
Ratios	Conventional transmission, 4.1:1; Overdrive transmission, 4.56:1

DIMENSIONS

Wheelbase	108 in.
Tread	Front 58 in., rear 57 in.
Wheelbase/tread ratio	1.88:1
Overall width	72 in.
Overall length	180 7/8 in.
Overall height	60 in.
Turning diameter	38 ft.
Turns lock to lock	3 1/2
Weight (test car)	2910 lbs.
Weight/bhp ratio	32.3
Weight distribution	Front 55.3%, rear 44.7%
Weight/sq. in.	21.9 lbs.
brake lining	
Tire loading (% of recommended maximum at curb weight)	Front 88%, rear 67.3%

PRICE
(All prices retail, taxes, etc.)

STOCK
ACCES

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Direct
Airfo
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SAF
DRIVE

BLI

Win

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DRIVE

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*Figures
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PRICES

(All prices are factory delivered prices and include retail price at main factory, provisions for federal taxes, and delivery and handling charges.)

	4-door sedan	2-door coupe	hardtop
Aero Lark	\$1732.10	\$1645.70	—
Aero Falcon	1860.61	1796.26	—
Aero Ace	2038.43	1963.11	—
Aero Eagle	—	—	\$2156.79

	(four-cylinder)	(six-cylinder)
Station wagon	\$1862.22	\$1948.75

ACCESSORIES

Overdrive	\$86.08
Radio	76.54
Heater	67.58
Continental kit	149.95
Skirts	24.95
Directional signals	16.68
Oil filter	8.38
Airfoam—per seat	8.50
Wheel discs	16.14
Two-tone paint	16.68

SAFETY CHECK

DRIVER SAFETY:

	YES	NO
Blind spot at left windshield post at a minimum?	X	
Blind spot at rear vision mirror at a minimum?	X	
Vision to right rear satisfactory	X	
Windshield free from objectionable reflections at night?	X	
Dash free of annoying reflections?	X	
Left side of dash free of low projections?		X
Cigarette lighter, ashtray and glove compartment convenient for driver?		X

DRIVER AND PASSENGER:

Front seat apparently locked securely at all adjustment points?	X
Metal strip eliminated between front quarter window and main door window?	X
Rear view mirror free of sharp corners?	X
Right side of dash free of projections?	X
Adequate shock-absorbing crash pad?	X

REAR SEAT PASSENGERS:

Back of front seat free of sharp edges and projections?	X
Rear interior door handles inoperative when locked?	X
Adequate partition to keep trunk contents out of passenger compartment on impact?	X

(MOTOR TREND constantly improves its test procedures. Because of this, we no longer use percentage ratings on the Safety Check. This avoids seemingly inaccurate comparisons between cars from month to month.)

OPERATING COST PER MILE

(In this portion of the test table, MOTOR TREND includes those items that can be figured with reasonable accuracy on a comparative basis. The costs given here are not intended as an absolute guide to the cost of operating a particular make of car, or a particular car within that make. Depreciation is not included.)

Cost of gasoline	\$105.00
Cost of insurance	111.00
Maintenance:	
Wheel alignment	5.25
1/2 brake reline	11.00
Major tune-up (one)	12.25

(Labor only; includes: clean and adjust or renew points and plugs; set spark timing; tighten cylinder head, manifolds and fuel line connections; clean air cleaner and fuel bowl; check compression; adjust carburetor, valves, and fan belt.)

First year of operation cost per mile (based on 10,000-mile annual average) 2.4c

MAINTENANCE AND REPAIR COST ANALYSIS*

(These are prices for parts and labor required in various repairs and replacements. Your car may require all of them in a short time, or it may require none. However, a comparison of prices for these sample operations in various makes is often of pertinent interest to prospective owners.)

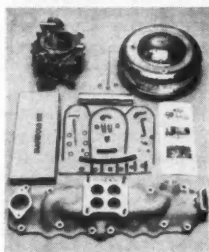
	COST	LABOR
Distributor	\$19.29	\$ 2.80
Battery	20.95	1.05
Fuel pump	15.43	2.40
Fan belt	1.78	.80
Valve grind	3.03	34.80
One front fender	30.86	25.00
Two tires	39.36	
One bumper	22.63	2.50
TOTALS	\$153.33	\$69.35

*Figures given in this issue are the first available 1953 charges, which appear higher for all makes than the 1952 figures in previous issues.

July 1953

CUSTOM TREND SPECIALS

1949-53 Ford-Merc
1932-48 Ford-Merc
4-BARREL SPECIAL

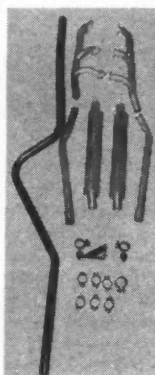


Quad Manifold
Kit for same
Stromberg 4 Barrel
Carb
Hellings Chrome
Air Cleaner

Ask for prices on other cars

Send
\$99.99
for all
Four
Shipped
Ry. Express
Collect

BALANCED EXHAUST HEADER SPECIAL— ANY V8 FORD OR MERC FREE—2 CHROME EXTENSIONS



Complete Set (any model). (Ford or Mercury only.) Balanced Exhaust Header System. Sells Retail \$60.00. With discount—only \$39.95. You save \$20.05. Set includes all pipes, headers, 2 mufflers (steel pack or stock), tail pipe, clamps, brackets and gaskets. Free—Two Chrome exhaust extensions with each set of above. Send Money Order—We ship by Railway Express. You pay Express on arrival. Will ship C.O.D.

Remember, if you don't give us Body Style and Year Model, we can't ship them.

Send money. Will ship C.O.D. Send 25c for wholesale and retail catalog.

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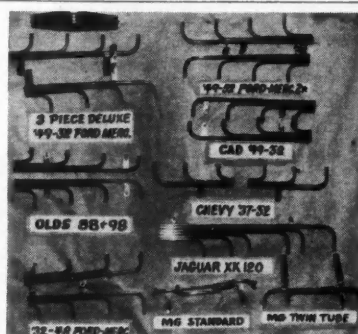
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Works with top up or down with curtains in place or not—install yourself in 20 minutes

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MG TWIN TUBE	8.95	4.45
JAGUAR	9.95	5.95
OLDS V8	8.95	4.95
CAD OHV V8	9.95	5.95
CHRYSLER V8	9.95	5.95
DE SOTO V8	9.95	5.95
BUICK V8	9.95	5.95
STUDEBAKER	9.95	5.95
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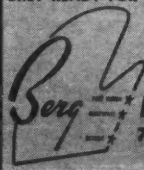
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When Is a Custom Shop?

(Continued from page 51)

was in the Navy, working as a mechanic. Clayton was in the Army. He also worked as a mechanic. I'm certain just being in the service doesn't make a professional customizer, though. If it does, the nation is loaded with them.

Actually, the story hasn't even begun yet, Boss. The two boys had never met up to this point. They might never have met except that after the war Neil met a very pretty Burbank, Calif., girl and married her. This girl had a sister. The sister snagged Clayton. Since the guys were brothers-in-law, they met. O.K.?

The two fellows got along very well together. Clay took to body work like he'd been working on cars all the time. They celebrated the start of their business in 1948 by moving to their present Burbank spot.

So far, Boss, Neil had been thinking about cars. Drawing designs and building a few customs. But even so I wonder just how much of a custom shop they were running?

I think you've asked the question all wrong. "How do you start a custom shop?" is not the point. The question should be, "When does an automotive shop become a custom shop?"

Bob

Dear Bob:

Have it your way. Deadline is Tuesday. We need the story. Just tell us when?

Jim

Dear Boss:

As far as when: For Clayton it probably came the first year they were in business together. They began building cars for the lakes. The car owners would supply the chassis and powerplant and Valley Custom would supply the Model T or Model A body. It was then that the boys began designing bodies to please people. During these years (1948-49) they designed and built many of California's hottest rods.

It was also during this period that Neil and Clay built a '29 roadster for Dick Flint. Today this stands as a design classic in its field. The car was built on a Model A chassis using a modified Model A body with a special nose. A hot rod? Sure, but that's my point. A custom shop doesn't get a good reputation overnight. It's something that has to be developed and earned. As it happens, many of the top boys followed Neil and Clay's pattern and developed techniques and ideas from working on rods.

Bob

Dear Bob:

Now listen here, boy, we're not stupid. Of course, many of the really good custom techniques were developed by men customizing the rods. Why, out at Valley, where you are now, they devised a method of "z-ing" the frame which is tops. Instead of cutting off the rear rail section and welding it on top of the present rail end, they cut a series of Vs in the rail. These move the rail up to the proper height without changing the bumper position. The rails are still as strong as ever.

Jim



Pride in workmanship doesn't stop at body work at Valley Custom. Conscientious Neal Emory is shown here double-checking one of their packaged lowering kits

Dear Boss:

This is just another example of their rule to "do it the best way." Quality has always been the important thing at Valley Custom. Did you know that Valley is one of the only two shops in Southern California which hammer-weld two panels together after a section job without using lead?

Ron Dunn's 1950 Ford is the car that probably first marked these two as a top design team. It was given a comprehensive restyling treatment at both front and rear with a section job as well. The result is something which experts have likened to the best of the modern Italian school. Well, Boss, it's no Lancia, but it's not stock Ford either. The car has a new look. Something every customizer strives for. The secret? Simplicity, and a section job that has left the windows their original size, so you can see out.

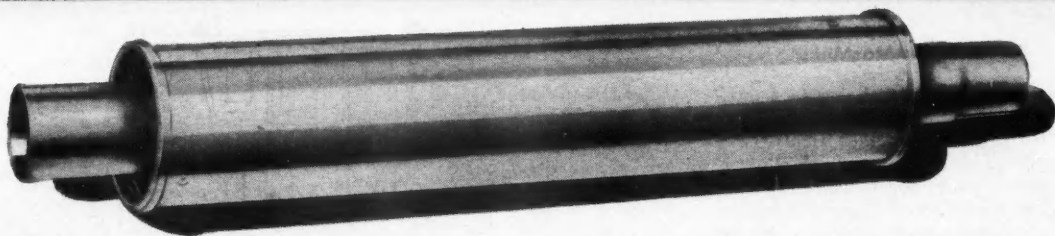
Right now, Valley is working on a terrific car. It's a '51 Olds 88 Holiday Coupe. This sectioned beauty will be something to see. They are designing a new grille which is most unusual. The headlights will be frenched in a way which has never been done before. I'll have all this information for you later, Boss. (NOTE: If Behme comes through, we'll have it for you readers in a coming Trend Book, "Custom Cars: 1954 Annual."—Editor)

But, to answer the question, "When is a custom shop?": I've watched Neil and Clay work on insurance stuff (it pays the salaries and rent), then seen them jump back to some customizing project. Yet it's hard to tell what kind of a job they are doing, insurance or customizing, for they do everything with great enthusiasm. I think that's the answer. When a man has a great love for cars, lots of fresh ideas and the ability to match the quality of his work to his enthusiasm, then he's made the grade. I think he's a professional customizer.

Do you agree with me, Boss?

Sincerely,
Bob

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One of many benefits of Miracle Power proved by this test is its capacity to lubricate upper cylinders. Oil alone won't lubricate here because temperatures may reach up to 1400° and oil burns at 550°. But Miracle Power, a blend of petroleum

super lubricants including colloidal synthetic graphite in suspension, withstands far greater heat. That's why the Miracle Power test engine had only half as much bore wear as the engine without Miracle Power.

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of repair bills because I get lubrication even when oil is temporarily absent. And Miracle Power prevents hydraulic valve lifter troubles."

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TREND

in design from classic to

By Strother MacMinn*

PRODUCTION AUTOMOBILE styling came of age when Henry Ford relinquished his hold on the "any color, so long as it's black" policy. This move, the first opportunity for the masses to achieve distinction and exercise taste, started the ball rolling toward individuality, an element of design that has become an important element in all phases of automobile styling.

Americans have admired old-country crafts and skills ever since Plymouth Rock, so it is not unnatural that many of our trends have utilized concepts bred within the cultured Continent. Our zeal for exhibition and novelty keeps us from the ultimate in refinement. However, regardless of what is considered stylishness, everyone can picture what has been done and what may be done to automotive design.

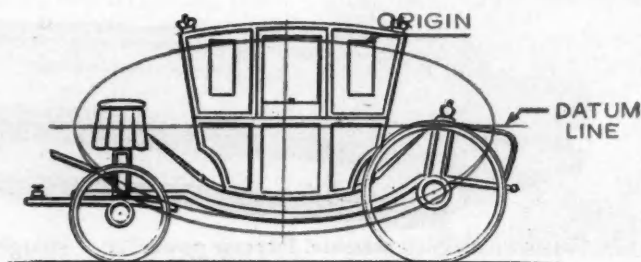
To understand styling, some basic system of analysis should be used to tell whether or not the car in question is in keeping with the current trend, and if it is a well-balanced design. Some of our best designs are recognized by their simplicity and honesty of line, but most of all, they are considered attractive because they look as if all the parts were made to go together. This harmony of curves and straight lines is most apparent when fundamental lines parallel each other, and when lumps and humps appear as if they had all agreed to merge into one main form.

If the entire body seems to fit inside an "egg" or an ellipse (called the origin line), the car will appear to be self-contained; and if all its primary lines are derived from the horizontal centerline of the ellipse (the datum line), the effect is one of unity. These lines form a basis by which we can evaluate the design of a car.

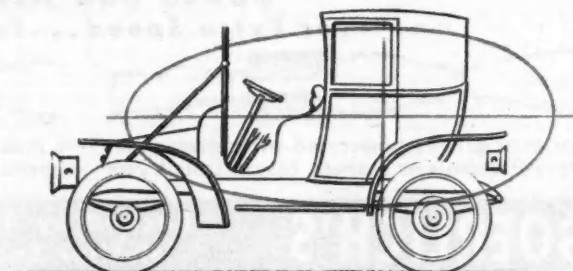
This ellipse theory of design, which is hundreds of years old, was recently brought to light by Mr. George H. Lancaster in an article written for *The Auto-car* magazine. As a method of guidance employed by coachbuilders, the theory is just as applicable in this age of beetle-like bodies and chrome trim as it was in the days of early European coachbuilding.

*The author, an instructor at the Art Center School of Los Angeles, Calif., is a member of the Society of Industrial Designers and the Society of Automotive Engineers.

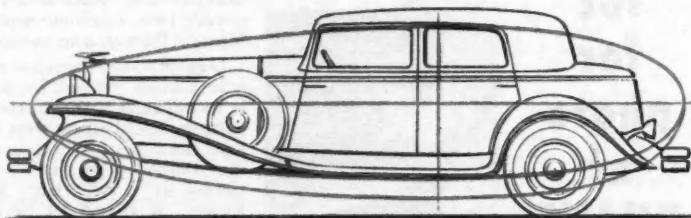
Eighty



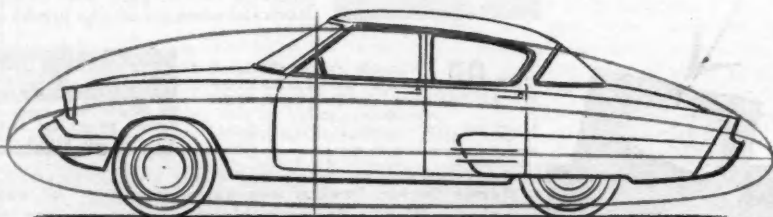
Coachbuilders of the King Charles II era used a symmetrical form based on the waist-line of the body to achieve graceful harmony between frame, sling and roof lines



Motorized elegance of 1905 was an outright compromise between the body-building and mechanical arts, with little attempt to conceal the contrasting character of the two



Design in the Thirties showed a blend of coachwork and mechanical refinement. The basic ellipse surrounding the body is still tapered forward to include the hood mass

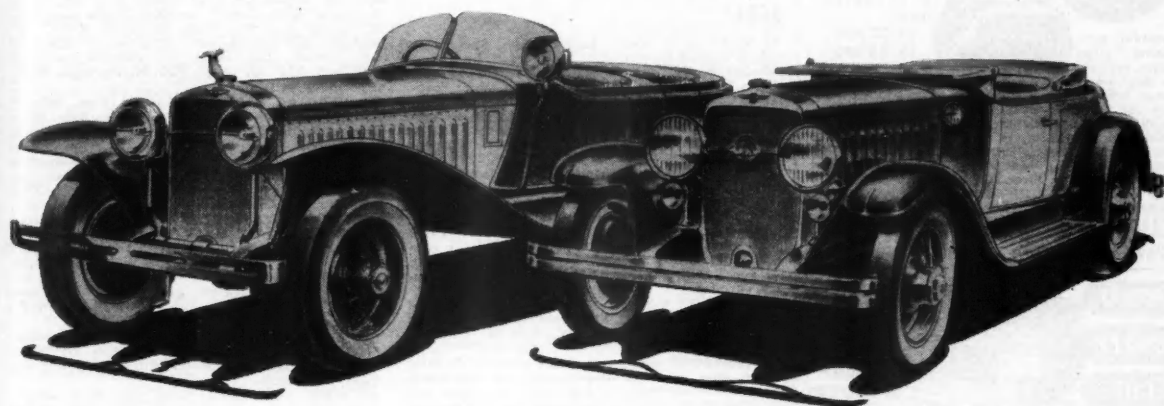


Today's aircraft-inspired trend illustrates a vastly different approach. The hood, rear deck and skeletal superstructure are joined in a flat, tapered elliptical form

Motor Trend

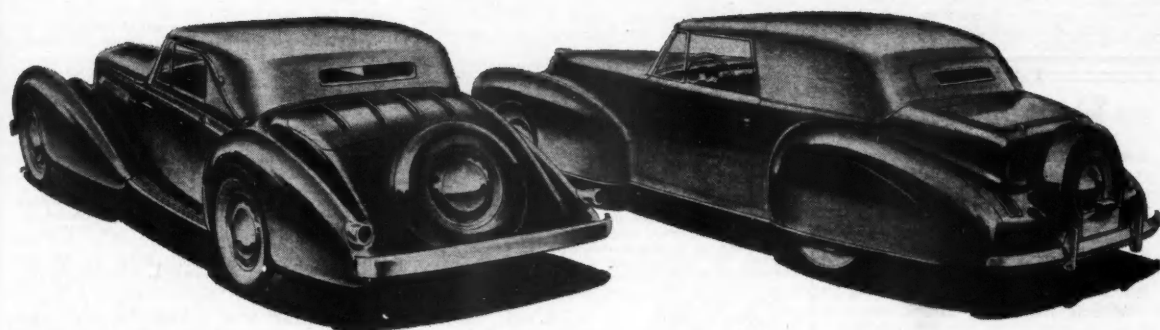
The
decor
July

cliché—a yardstick of evaluation



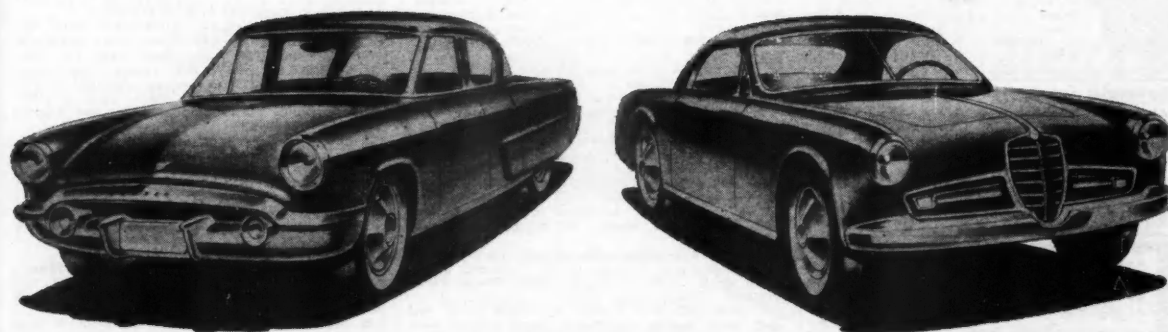
The famous Hispano-Suiza's fine reputation for elegance and character was reflected in the 1927 La Salle, the first GM

car to be styled by a designer outside the organization. The trend, seen in many GM cars, continued well into the Thirties



Direct simplicity, restraint and severe good taste marked the Lincoln version of the continental cliché. The Henri Chapron

body on a Delage of the late Thirties was more flamboyant, but harmonious in its sweep. Note the sloped spare wheel and deck



The present American trend toward simplicity and harmonious decoration (coupled with expansion within a practical size

limit) is similar to the race-bred, slightly exaggerated Italian style. Body lines replace chrome for linear effects

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- '50 CHEVROLET conv., completely restyled, Cadillac grille and fenders, dechromed and smoothed, electric latches, franchised headlights, smoothed and padded dash, Continental, lowered. \$2400. Info and pics on request. D. Eichstedt, Knox, Ind.
- '42 LINCOLN CONTINENTAL conv., body, tires and top good, engine rough, \$900 cash. J. Ertman, 602 S. Birch, Santa Ana, Calif.
- '28 CHRYSLER 72 roadster, new paint, top, excellent rubber, body perfect, engine good, highest offer over \$300. Takes it, pics on request. F. Hill, 1989 County Club Blvd., Stockton, Calif.
- '32 PACKARD CONV., Dietrich body, recently rebuilt engine, new top, upholstery, tires, superb mechanical condition, needs minor body work, \$550. S. Johnson, 905 Linwood Blvd., Kansas City, Mo. Lucerne 6092.
- '23 AUBURN touring, side curtains, good tires, showroom condition, \$575. T. Gray, Box 595, RD 2, Verona, Pa.
- '21 CHANDLER four-door sedan, four new tires, showroom condition, \$400. T. Gray, Box 595, RD 2, Verona, Pa.
- '40 BANTAM station wagon, partly restored, good buy. Also 13-tooth pinion and 39-tooth ring gear, new, for Model T axle. E. Young, 319 E. 326th St., Willoughby, Ohio.
- '48 LINCOLN CONTINENTAL conv., excellent condition, will consider the best offer. Will pay \$25 for the info that will lead to the location and purchase of an Owen-Magnetic. E. Young, 319 E. 326th St., Willoughby, Ohio.
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- MODEL T PARTS; new, piston rings, grease retainers, fan belts, spindle bolts and bushings, wheel bearings, gaskets, more items new and used, write your needs. S. Tull, Jr., 2020 N. 37th St., Omaha, Neb.
- '50 MERCURY black, bored, ported intake and exhaust, relieved, baffled, set new balanced J. E. pistons, pins, Grant rings for block, never assembled. \$125. F. Breene, 5849 Faculty Ave., Bellflower, Calif. Torrey 62386.
- MERCURY ENGINE, complete, competition, 3% by 4 1/4, run at six lake meets, holds SCTA C Lakester record, Evans heads, Edelbrock four carburetors, Potvin steel cam, big valves, etc. \$475. F. Breene, 5849 Faculty Ave., Bellflower, Calif. Torrey 62386.
- '25 EXCELSIOR; this superb sports car not for the vintage enthusiast but the vintage connoisseur. Engine, coachwork in excellent condition, \$900. Foster-Kemp, Grantham Place Ct., Park Lane, London W. 1, England.
- '31 PIERCE-ARROW phaeton conv. with double cowl, running condition, no top, good tires, fine lines. S. Haigh, 12 St. Lukes Place, New York, N.Y.
- CHET HERBERT cam for '49 Olds, steel billet, roller tappets, and adjustable push rods, 270 degree intake and exhaust, complete setup in excellent condition, \$110. J. Stewart, 60 Melrose St., Boston 16, Mass.
- '37 CORD 812 sedan, original upholstery, perfect transmission and U-joints, needs work and paint, extra parts, \$350. F. Logan, 8556 Ocean View, Whittier, Calif.
- '41 CADILLAC conv., series 62, good body, red and white leather upholstery, good rubber, runs good, Hydra-Matic, \$695. S. Hagberg, Greenville, Iowa.
- '28 DURANT coupe, six cylinder with rumbleseat, \$100. Also five 32 x 5 tires, tubes and rims. \$55. W. Huffman, University Apts. E-230, Bloomington, Ind.

- '38 CADILLAC 65 V-8 conv. sedan with rear seat windshield, easily restorable, needs slight paint touch-ups, mechanically excellent, \$350, photos 10¢. W. Mallett, Box 156, Trumbull, Conn.
- '40 LINCOLN CONTINENTAL conv., excellent body, new black lacquer and white top last Nov., original red leather interior, new carpets, chrome and glass good, \$795. Ens. R. Strickland, 401 C Birmingham Ave., Norfolk, Va.
- ROLLS-ROYCE 25 hp, de Ville sedan, English right-hand drive, Barker body, original, not restored, two fuel and ignition systems, tools and trunk, \$1900. B. Marriott, 335-A, Rt. 1, Bothell, Wash. Phone 662173.
- '18 BUICK one-half ton express truck, partially restored, engine OK, five brand new 30 x 3 1/2 tires and tubes, never mounted, \$150 complete. N. Haslop, Box 271, North Ridgeville, Ohio.
- AUBURN 653 engine, \$40, transmission, \$25, five wire wheels, \$20, hood, \$5; radiator core for 810 Cord, \$22. All prices FOB. H. Denhard, RD 2, Greenville, N.Y.
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- '36 LEBARON LINCOLN sport coupe, well preserved, can be driven anywhere, \$500. R. Gottlieb, 629 South Hill St., Los Angeles, Calif.
- BRESCIA BUGATTI three-passenger opera coupe, 5000 original miles, many spare parts, \$1100. D. Fairchild, 556 S. Gramercy Place, Los Angeles, Calif. DU 30324.
- '34 FORD five-window coupe with new wheels, tires, glass, Sealed Beams, wiring, many instruments, two bucket seats, your offer or trade for English Ford. R. Slotten, 414 N. Garfield, Lombard, Ill.
- CLASSIC CAR CATALOGS; Cadillac, Lincoln, Packard, also foreign and orphan cars, also Motor (N.Y.) annuals. Details for large, stamped, self-addressed envelope. A. Twohy, 400 N. Kenmore Ave., Los Angeles, Calif.
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- THICKSTUN dual intake manifold for '51 Chevrolet, with extra carburetor, linkage and two air cleaners, \$25. FOB Boston. H. Ruane, 255 Adams Ave., West Newton, Mass.
- '31 CADILLAC V-16 limousine, seven-passenger, original showroom condition, nearly new tires and battery, ready to drive anywhere, \$1250. L. Reed, 3986 Alpha, San Diego 13, Calif.
- '25 MODEL K MERCEDES roadster, runs good, excellent 7.00 x 20 tires, good original condition throughout, a truly great classic car, \$1750. L. Reed, 3986 Alpha, San Diego 13, Calif.
- '22 ROLLS ROYCE four-passenger speedster body by Locke and Co., right-hand drive, four-speed transmission, very good mechanically, needs repainting, drive it anywhere, \$1250. L. Reed, 3986 Alpha, San Diego 13, Calif.
- '33 AUBURN Eight coupe, 50,000 actual miles, excellent mechanically, good rubber, drive anywhere, \$295. L. Reed, 3986 Alpha, San Diego 13, Calif.
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- '27 ROLLS ROYCE PI conv. Landauet, a true classic, large, luxurious, excellent running condition, top, finish and tires, '53 plates and inspected, \$875. B. Winner, 2440 Maple Ave., Pittsburgh 14, Pa.
- '40 DELUXE FORD coupe, fast, powerful, a good one, first class condition, all original Ford parts, \$450. B. Winner, 2440 Maple Ave., Pittsburgh 14, Pa.
- '35 AUBURN Model 851 phaeton conv. sedan, good top and upholstery, paint fair, original accessories, mechanically sound, \$300. E. Vasyka, Rt. 3, Box 81, Savannah, Ga. Phone 30924.

Motor Trend

Jul

'38 PACKARD, Super Eight limousine, unusually good condition, recent valve job, new king pins, photo on request, \$700, or reasonable offer. F. Schmidt, Bedford Hills, N.Y.

'41 PACKARD Darrin conv., Victoria, engine modified and recently overhauled, good top, body, paint and all leather interior, best offer over \$1200. R. Kuehn, 1515 E. Main St., Auburn, Wash.

'32 CHRYSLER Imperial Eight, four-door sedan, good running condition, 50,000 miles, six wheels and tires, \$250, or best offer, pic on request. A. Frey, 2201 1/2 S. Union St., Shawano, Wisc.

'48 LINCOLN CONTINENTAL hardtop, completely renovated, engine rebuilt, new rear end, refinished two-tone lacquer, maroon and black, \$2500. D. Wolf, 145 N. Erie St., Toledo 2, Ohio.

BAYERISHE MOTOREN WERKE four-door, black, salon model 326, 80,000 km, completely overhauled by factory after 50,000 km, one owner, \$2500. Col. H. de Kuszaba-Dabrowski, Cardinal Ranch, Tappan, B.C., Canada.

'31 KISSER speedster, unrestored, original Dayton wheels with knock-off hubs, engine, chassis good, boat-tail body complete, tires poor, upholstery shot, missing headlamps, windshield. P. Woods, 500 Hazel Dr., Corona Del Mar, Calif.

DUAL INTAKE and exhaust manifolds for Buick Roadmaster. B. Forman, Monmouth, Ill.

PACKARD Super Eight Dietrich victoria club conv., three-spot top good, body good, needs floor mats and new front seat upholstery, \$365 or best offer. R. Hollingsworth, 236 Gordon Ave., Oakland Beach, R.I. Bayview 10229J.

'40 PACKARD custom with English Lagonda conv. body, 160 hp engine, short wheelbase, mint condition, five new whitewalls, only one of its kind, \$2000. W. Oexle, Box 357, Ridgefield, Conn.

'28 CHEVROLET sedan, five new tires, body solid, excellent condition throughout, can be driven anywhere, \$75. Two 32 x 4 1/2 tires, \$15; one 30 x 3 1/2. S. N. Miller, Mounted Route, Bettendorf, Iowa.

'33 HUPMOBILE 321 sedan, good, solid car, easily restorable, best offer over \$100. W. Gilbert, 304 N. Yosemite, Oakdale, Calif.

'41 LINCOLN CONTINENTAL hardtop, rebuilt '48 Mercury engine, rebuilt shocks, brakes and heater, new paint and interior, \$1250, cash only. T. Bade, 14 S. Bingham, Memphis, Tenn.

'30 CHEVROLET Tudor, exceptionally clean inside and out, would trade for '23 T roadster or coupe, body must be perfect, near N.J. J. Decoster, Jr., 380 S. Finley Ave., Basking Rd., N.J.

WEIAND 8:1 aluminum head for Studebaker Champion, fits '39-'52, used slightly, \$30. P. Coolbaugh, 7803 Cressett Dr., Chicago 35, Ill.

'25 JEWETT four-door, exceptionally good, new paint, tires and battery, sound engine, 40,000 original miles, photos and all details on request. W. Porter, R. #3, Rhinelander, Wisc.

'21 BUICK touring six, beautifully restored, new engine, point and etc., photo on request. W. Solomon, La Vale, Md.

'41 LINCOLN CONTINENTAL conv., much modified V-8 Mercury engine, 15 in. wheels, whitewalls, excellent condition throughout, write for complete info and photos. B. Boshford, 131 N. Broadway, Wichita, Kans.

'05 REO two-cylinder touring, serial #76, unrestored but completely original, wood body and fenders, best offer. W. Woodall, Box 255, Marcus, Ia.

REO one-cylinder runabout, unrestored, needs upholstery, best offer, all inquiries answered. W. Woodall, Box 255, Marcus, Iowa.

AIR LIFTS, two, with coil springs, etc., fits any two in. wide rear springs of any car, used very little, sold Mercury, sacrifice, \$18. L. Tippitt, Box 185, Ft. Lavaca, Texas.

'39 LA SALLE sedan, green, sky view top, good condition, also parts from duplicate include new rear end, complete body, everything but engine. R. Richardson, Box 519, Newport, N.C.

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'49 STANDARD VANGUARD, engine just completely overhauled, an American rear bumper added, stiff front shocks installed, radio, heater, electric wipers, \$750. F. Ross, 2540 Dexter, Denver, Colo.

'51 CHEVROLET conv., five new whitewalls, radio, heater, extras, dechromed hood, electric trunk, Stromberg carb., dual manifolds, 3/4 cam, 14,000 miles, fine condition, asking \$2300. E. Shore, 11260 Sunset Blvd., Los Angeles 24, Calif.

CHEVROLET ENGINE, 244 cu. in., all new parts for full house race engine, engine, parts stored, never built, must sell, write for details. W. Haist, ACAN, Operations-Tower, NAS Whidbey Island, Wash.

'11 CADILLAC, needs tires, otherwise complete and in running condition. M. Shores, Fillmore, Mo.

'22 ESSEX Coach, four-cylinders, less than 12,000 miles, condition excellent, four new tires and tubes, new battery, original interior, reasonable. F. Miller, 5217 Lake Forrest Dr., N.W., Atlanta, Ga.

'52 MG, black, red leather, new car condition, extras, driven less than 5000 miles, reasonable, or will trade for Hornet club coupe. F. Miller, 5217 Lake Forrest Dr., N.W., Atlanta, Ga.

'32 AUBURN coupe, cloth covered hardtop, running and restorable, \$125. W. Edwards, 839 Marsh Rd., Menlo Park, Calif.

SUPERCHARGER, Graham centrifugal-type and drive parts, good condition, make fair offer, also a pair of '40 Chevrolet front fenders, fair. F. Christie, 358-A Princeton Rd., Haddonfield, N.J.

'30 BUXTON front drive roadster, 33,000 miles, side mounts, good top, side curtains, tire covers, A-1 mechanically, five ft. high with top up, \$1000. R. Hick, 612 Parkside Blvd., South Euclid 21, Ohio.

FRENCH FORD, four-passenger, 60 hp V-8 channeled conv. coupe, body custom built in Paris '39, blue lacquer, new whitewalls, top, brakes, mileage 22,000, best offer over \$750. H. Hill, 244 East Avenue, Rochester 4, N.Y.

'52 CROSLY SUPERSPORT, engine just rebuilt, body like new, has Braze manifold, windings, heater, \$650 or best offer. D. Topel, 5950 N. McCook Ave., Chicago 30, Ill.

'52 MARK VII JAGUAR, light blue with grey leather, 7000 actual miles, selling because of purchasing coupe and roadster, will deliver, \$3000. D. Dankworth, Cilles Bldg., Bridgeport, Ohio.

'28 HUPMOBILE Eight, 41,602 miles, rumbleseat, mechanically perfect, body in excellent condition, but needs refinishing, genuine Spanish leather throughout, \$150. N. Christensen, 317 Sumner Ave., Humboldt, Iowa.

'41 PACKARD 180 special limousine, excellent condition throughout, automatic windows, good tires, fine finish, auto-clutch, runs good, \$500. E. Wright, 34 DeForest Ave., Summit, N.J. SU 682611.

'30 PACKARD conv. coupe, standard Eight, engine good, needs rear universal, otherwise generally good shape, six wire wheels, side mounts, \$300 or \$325 with replaced universal. E. Wright, 34 DeForest Ave., Summit, N.J. SU 682611.

MUNTZ CADILLAC, white, 113 in. wheelbase, over 500 lbs. lighter than current model, black leather upholstery and top, many extras. B. Roulette, 4374 Hilldale Rd., San Diego, Calif.

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NATIONAL AUTOMOTIVE Service Manual, complete specifications all cars manufactured in U.S., '29-'52. Includes classics such as Auburn, Cord, Duesenberg, La Salle, Marmon, Pierce Arrow, Stutz, \$100. R. Pryor, Rt. 5, Box 2279, Orville, Calif.

ROLLS ROYCE P1 Brewster sedan, 20-in. wheels, engine overhauled in Nov., all new safety glass, \$750. J. Carpenter, 9 Lindworth Lane, St. Louis 17, Mo.

'35 AUBURN Speedster, supercharged, four-door conv. sedan, new engine and upholstery, body in good condition, must sell. I. Cardwell, 15 Fuller Ave., Baltimore 6, Md.

'39 CADILLAC V-12 coupe, all or parts, engine recently overhauled, new radiator, shop manual, \$175. A. Decker, Box 202, Conrad, Iowa.

PARTS, brand new and used, for Ford T, TT trucks, few new fenders, hub caps, used Rajo head, lots of other parts available. E. Hemmings, 1036 Hampshire St., Quincy, Ill.

'15 SAXON roadster, original new car condition throughout, tires, etc., \$1500. J. Gray, 1447 Wampanoag Trail, Barrington, R.I.

'48 LINCOLN CONTINENTAL conv., nice condition, low mileage, new black top, maroon, whitewalls, overdrive, radio, twin underseat heaters, defroster, red leather upholstery, \$1695. Major R. Towne, 3030 Willana Ave., Montgomery, Ala.

'52 MG TD engine and transmission complete with all accessories except generator, removed from car at 15,000 miles, asking \$395, make offer. T. Verdon, 481 Mountainview Dr., North Plainfield, N.J.

EDMUNDS 8.5-1 head for '50 Hudson Pacemaker, will fit other '50 Sixes also, \$35. Hudson Hornet 7.2-1 aluminum head, \$35, both used. J. McMillan, 10221 Doty, Inglewood 2, Calif.

MARK VII JAGUAR, used green, excellent condition, 12,000 miles, Andrex shocks. T. McKenna, Jr., 18 Moore Rd., Bronxville, N.Y.

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'32 PACKARD Light Eight sport coupe, wire wheels, rumble seat, all original, near mint condition, excellent tires plus three new, second owner, \$700. W. Hathorn, 3400 No. Shore Dr., Clear Lake, Iowa.

'36 K LINCOLN phaeton, exceptionally fine original condition, top, curtains, upholstery, paint like new, never any rust, whitewalls, both sides, mechanically perfect, \$1450. A. Warner, Elk's Club, Oak Park, Ill.

'34 SJ BUESENBERG sport phaeton, as described and pictured in May issue of MOTOR TREND equal to new, \$15,000. J. Gore, Park Hotel, Toledo, Ohio.

DETROIT RACING EQUIPMENT for late Cadillac, excellent condition, full race cam, solid lifter kit, dual intake manifold with carburetors, hi-compression heads, 1/2 cost, J. Meyer, 112-01 Queens Blvd., Forest Hills, N.Y.

810 CORD stock phaeton, restored, new engine, joints, top, upholstery, etc., rebuilt transmission, performance guaranteed, deliver anywhere, \$2500 or best offer. R. Eddy, 8007 NE Siskiyou, Portland 13, Ore.

'29 BUICK rumbleseat coupe, six-cylinder, everything original, immaculate condition, pics on request, best offer takes. E. Weirich, Jr., 4340 DeCATUR St., Denver, Colo.

'36 CADILLAC V-12 four door sedan, 60,000 miles, has about 90% of original quality, paint, engine, tires, interior very clean, \$450. C. Gallup, Rt. 1, Addison, Mich.

'42 LINCOLN CONTINENTAL conv., V-12 engine, black body with tan top, radio and heater, excellent condition inside and out, five extra tires. C. Betts, Yardley Rd., Yardley, Penna.

'37 CORD supercharged custom Beverly sedan, new whitewalls, new transmission rebuilt at factory and new battery, 100% Cord ready to drive anywhere, perfect, \$1850. J. Contz, Pfile Bros. Inc., 620-626 McKean Ave., Charleroi, Penna. Phone 35585.

'31 DV-32 STUTZ, four-door sedan, clean, complete and in good mechanical condition, ready to drive anywhere. E. Chisholm, Monson, Mass.

'31 AUBURN SPEEDSTER, Model 8-98-A, 14,000 miles, completely original, shown at International Auto Show in '52, asking top dollar. B. Barbuto, 1651 W. 8th St., Brooklyn 23, N.Y.

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'40 LA SALLE club coupe 52, custom radio, heater, hill-holder, Fram, electric pump, recent engine overhaul, complete, new accessories, clean interior, unrestored, best offer. W. Acton, 677 W. Canfield, Detroit 1, Mich.

'40 LA SALLE V-8 conv. coupe, beautiful hand-rubbed black finish with maroon trim, good top, plenty of speed and pep, excellent sport car for \$495. J. Nichols, Beech Hill Rd., Lloyd Harbor, Huntington, New York. Huntington 42601.

'36 AUBURN conv. sedan in best of condition, \$500 or will swap for antique touring car. B. Gregory, 1 Macondry St., Valley Falls, R.I.

PARTS for '38 to '40 V-16 Cadillac, including complete '38 engine. W. Frohning, Newbury Industries, Box 48, Newbury, Ohio.

'40 V-16 CADILLAC sedan, excellent condition. W. Frohning, Box 204, Chagrin Falls, Ohio.

'30 ESSEX four-door sedan in restorable condition, body and chassis sound, engine fair, \$75. Also information leading to location of '31 Essex for parts. G. Resh, R. 1, Roselle, Ill.

'36 AUBURN supercharged conv. phaeton, new engine, top, tires, paint, etc., 1000 miles since rebuilding. Swap for sports car or something odd or sell outright. P. Reed, 2039 Stabler Rd., Akron 13, Ohio.

'23 MODEL T FORD touring, excellent mechanical condition, \$325. FOB, Memphis. T. Bogue, PO Box 6833, Hollywood Station, Memphis 8, Tenn.

'52 NASH HEALEY conv., sand tan color, brand new, \$4950. E. Asher, 225 Westmoreland Ave., Waukegan, Ill. Ontario 28550.

'41 LINCOLN CONTINENTAL conv., body better than fair, rubber good, almost new top, \$750. J. Barnes, 407 E. Washington St., Tipton, Ind.

'19 HUDSON COACH in excellent mechanical condition, good tires, new top and liner, a good buy for \$500. G. Vance, 4070 Northside Dr., Atlanta, Ga. Cherokee 7553.

WICO ELECTROMAG for six-cylinder engine, similar to Scintilla Vertex, right hand rotation, never used, three available, \$50. each. T. Bowden, 143 Broadway, Bangor, Maine.

OCTA-GANE water injector, \$12. FOB. H. Denhard, RD 2, Greenville, N.Y.

'33 PACKARD EIGHT sedan, body good, no rust, interior and engine need work, new clutch, vacuum brakes, running condition, \$150. D. McConnell, 111 N. Shannon St., Van Wert, Ohio.

'48 LINCOLN CONTINENTAL hardtop, sky blue, new battery, new whitewalls, stock engine, superb condition throughout, best quality Buell air horns, C. Gallagher 610 N.W. 9th St., Oklahoma City, Okla.

'32 PACKARD Light Eight model 900, five-passenger, four-door, exceptionally good condition, drive anywhere, one owner, about 87,000 miles, wire wheels, make offer. M. Moore, PO Box 1500, Bakersfield, Calif.

'29 BUICK SIX sport roadster, top fair, original whitewall tires, completely rechromed, red body, black fenders, wood spoked wheels, immaculate throughout, best offer \$600. P. Leon, Jr., 117 Garcia St., Santa Paula, Calif.

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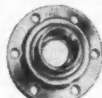
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'37 LAGONDA town sedan, 4 1/2 liter, all aluminum Thrupp Mabbler body, mint condition, 60,000 miles, original cost \$7500, nothing finer anywhere. A. Carlisle, 1707 Benedict Canyon, Beverly Hills, Calif.

'49 OHV CADILLAC engine, 4500 miles since overhaul, Herbert roller cam, enlarged and polished ports, dual valve springs, complete less flywheel and fan, \$475. B. Ehlich, 1979 Rockaway Pkwy., Brooklyn 36, N.Y. NI 91896.

'47 LINCOLN CONTINENTAL, rebuilt engine, clean, good paint, nice upholstery. J. Bruhlmeier, Box 33, Bloomsburg, Pa.

'41 BANTAM conv. touring, four-passenger, excellent condition, rebuilt engine, three-main crankshaft, downdraft carburetor, auto pulse, new paint, new roof with boot. \$375 or nearest offer. F. Barbour, Stony Hill Rd., FRD, Wilbraham, Mass. BANTAM speedster and '34 Austin coupe less engines, Bantam truck chassis with wheels. Three-main engine running condition. Variety of Bantam, Austin engine parts, everything for \$225. F. Barbour, Stony Hill Rd., RFD, Wilbraham, Mass.

'31 MODEL J DUESENBURG seven-passenger sedan, original body, never wrecked, needs restoration, good classic style, highest bid or \$950. G. Fanston, 2839 Britton St., Dallas, Texas. Elmhurst 4029.

MARK V JAGUAR Salon, immaculate condition, light green leather interior, light metallic green finish, new whitewalls, \$2700. L. Rinehart, 1089 Baconsfield, Grasse Pointe 30, Mich.

'41 CADILLAC phaeton, four-door sedan, top like new, two-tone leather upholstery, standard transmission, excellent condition throughout, drive anywhere, \$895 or best offer. W. Musick, 806 N. Carpenter St., Chicago 22, Ill. Chesapeake 31783.

'51 VINCENT BLACK SHADOW, 1800 actual miles, been stored over a year, about \$50 damage, mechanically perfect, cost about \$1500, sell for \$850. E. MacLutters, 43 Bierce Ave., Dayton 3, Ohio.

'31 FRANKLIN, custom body by Dietrich, 45,000 miles, paint and upholstery in beautiful, original condition, engine rebuilt in March this year, pics on request, drive anywhere, \$850. P. Driscoll, Box 1796, Yon, Pa.

'50 FORD-O-LAC in excellent condition, equipped with '52 Cad engine and Mallory ignition system, 6000 miles on engine, best reasonable offer accepted. C. Landin, 639 N. Broad, Fremont, Nebr.

'28 HUPMOBILE SIX, four-door, excellent original condition, leather upholstery, 22,000 miles, new tires, can be driven anywhere, in storage 22 years, \$275. A. Parson, 515 Howard Ave., Billings, Mont.

'32 PACKARD conv., red, shell fenders, rumble-seat, Continental rear, engine, transmission, tires, finish in overall top shape, \$350 or best offer, pics, info available. R. Ryan, Gobles, Mich.

'49 CHEVROLET convertible, one owner, 34,000 miles, dual pipes, dual carbs, 3.73 axle ratio, etc., car in excellent condition, best offer. G. Stickney, 4644 Pearl Rd., Cleveland 9, Ohio.

'28 PACKARD 526 sedan, good body, needs paint, new rings, pins, valves, excellent mechanically, one shot lubrication, driven every day until recently, make offer. G. Harris, Box 295, Port Townsend, Wash.

HISPANO SUIZA six cylinder engine, complete less flywheel, needs rebuilding, will take \$200 cash for it. L. Stevens, 120 W. New York St., Pontiac, Mich.

'30 MODEL 70 CHRYSLER SIX, completely restored to its original condition, sidemounts, 25c for pics, information. R. Hartman, 3880 N. 18th St., Milwaukee, Wisc.

'49-'50 PACKARD Super Eight sedan, gleaming black, Premium Nylon whitewalls, engine modified, custom ignition, cam, etc., economical over-drive, power performance, prestige, \$1295. C. Worth, 2945 Sheffield Rd., San Marino, Calif. AT 43843.

J2X ALLARD, new, never run, with or without new Chrysler engine, best offer takes, might consider trade. A. Walker, Jr., 4317 Excelsior Blvd., Minneapolis, Minn.

'30 PIERCE ARROW, all original, excellent shape, good tires, what am I asked? J. Wilson, 545 Langside St., Winnipeg, Man., Canada.

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MODEL A DUESENBURG phaeton or roadster from '20-'27, prefer on West Coast. J. Howarth, 1230 Evans St., San Francisco, Calif.

'40 FORD conv. coupe front bow pieces, must be left and right corner pieces to hold the bow in place. G. Handschin, 422 Columbia Ave., Cliffside Park, N.J.

LATE ROLLS ROYCE, good condition, send photos and price first letter. B. Nabers, PO Box 265, St. Petersburg, Fla.

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CATALOGS, automobile advertising, '26 thru '42, anything older, also need Motor Show Annuals for my collection, any pre-war. H. Mayer, Munich, Mich. JORDAN PLAYBOY in restorable condition, earlier model the better, also 19 in. wire wheels with hub cap for '29 Whippet, six lug holes. T. Hulze, Library Ave., Westhampton Beach, N.Y.

'30-'33 PACKARD, CADILLAC, restored or mechanically sound touring car, prefer short body with six wire wheels and side mounts. L. Chapman, 414 Littell Ave., Dayton 9, Ohio.

PACKARDS, especially '41 Super Eight conv., also Pierce Arrows. R. Wilkie, Sunset Lane, Pompton Plains, N.J. Terhune \$2550. STUTZ BEARCAT, about '14 to '20, also consider any other Stutz if in good condition, send photo, serial number, can exchange info. E. Pfannebecker, Latham, N.Y. State 59932.

LINCOLN CONTINENTAL, any year, body must be immaculate inside and out, state price. W. Freed, 1308 Main St., Elwood, Ind.

'49-'51 LINCOLN V-8 engine, or new V-12 short block. Or will sell '41 Zephyr conv., fair condition, \$150. J. Lemke, 8444 Bradley, Sun Valley, Calif. SIMPLEX, MERCER, STUTZ or similar car of bucket seat, Bearcat type, \$25 reward for lead resulting in purchase, must be restorable. R. Stewart, 7 Ardsley Terr., Irvington-on-Hudson, N.Y.

'28-'32 PIERCE ARROW, preferably open car, state price and condition, photo if possible, also service manual, parts books, catalogs and owners manual. R. Schweizer, 419 Vernon Rd., Philadelphia 19, Pa. MODEL T FANS in my area, will swap yarns, parts, experiences, or what have you, will buy parts list, books, catalogs, etc., make offer. G. Winkelman, 1141 Abington Pike, Richmond, Ind.

'41 CHEVROLET Special Deluxe two- or four-door, must be in immaculate condition, no rust, send complete description and price first letter. M. Fowler, 919 Briarfield Rd., Newport News, Va.

'31, '32 PACKARD phaeton, six wheels, good condition, eight-cylinder, will pay reasonable price in or near Phila. W. Fox, 1900 Land Title Bldg., Philadelphia 10, Pa. RI 60771.

'35 or '36 FORD roadster, must have original paint, solid body, have cash or trade clean '40 Ford Deluxe coupe, will travel up to 400 miles. J. Poltera, 1816 Burling St., Chicago 14, Ill. Michigan 21866.

'37 CORD supercharged body parts; hood, louvers, manifolds, pipes, right front fender, ventilated hub caps, metal top cover for single seat conv., state price, condition. L. Boehner, 2604 32nd, Lubbock, Texas.

'47 CADILLAC grille complete, must be immaculate for conversion, also skirts and speed equipment for '41 Cadillac, model 75. D. Irmiger, Northwestern Academy, Lake Geneva, Wisc.

RESTORING '27 Big Six Buick, model 51, would like to hear from all sources of parts for same, both engine and body. R. Brown, 114 W. Currahee St., Toccoa, Ga.

'48 LINCOLN CONTINENTAL conv., repairable condition and best cash offer. S. Chue, Harold Hotel, 617 Seneca St., Seattle 1, Wash.

PACKARD 12 in mint condition, prefer '37 conv. sedan or seven-passenger, send pic, price, description. L. Mabrey, 175 E. 96th St., New York, N.Y. DAYTON RACING wheels and hubs, 15 or 16 in., or similar type, also driver's-side rear fender for 810 Cord, reasonable. J. Ekuhn, 5252 Broadview Rd., Cleveland 29, Ohio.

OBsolete AIRCRAFT, old, built '10 to '30. Also parts, engines, cash reward for leads, can locate antique cars, parts. A. Munch, PO Box 71, Newburgh, N.Y.

SPEED, CUSTOMIZING equipment, new or used, to help customize '47 Plymouth conv. Let me know what you have and I'll use it. G. Badendyck, Jr., 911 Bloomfield St., Hoboken, N.J.

AUBURN speedster in restorable condition, six or eight cylinder, any year. J. Gulatto, 330 Knowlton St., Rockford, Ill.

'35 PACKARD, any model, condition is not important, must be reasonable, state price. R. Burns, Jr., 835 Grosvenor Rd., Rochester, N.Y.

OUTSIDE MIRRORS, two, to fit covers in fender well of '32 Cadillac. Also one or six hub caps for same. A. Miller, 389 Herman St., Buffalo 11, N.Y.

WRECKED late-model Oldsmobile 88, 98 or Cadillac within 300 miles Raleigh, write giving price and description. D. Massey, Rt. 2, Zebulon, N.C.

'36 or '37 CORD conv., good running condition, body not important, state price and photo if possible. L. Martin, 2401 Bennett Ave., Flint, Mich.

'49-UP HUDSON conv. chassis for custom, body, interior unimportant, no "totals." State full details, vicinity R.I. Consider trading '41 Cadillac conv., synchromesh, perfect to good. J. Thornburg, DM3, Mobile Const. Batt. 7, FPO, New York, New York.

FOUR CYLINDER STUTZ parts or complete car, prior to '20, also any Packard parts or complete car, '15 or before. L. Reed, 3986 Alpha, San Diego 13, Calif.

RADIATOR EMBLEMS, radiator cap ornaments, Willis St. Claire goose, Hispano hawk, Sporton horn, Kleson right angle horn, air whistles, cut-outs and pedals. F. Edwards, 839 Marsh Rd., Menlo Park, Cal.

PARTS for L-29 Cord, if you have any L-29 parts for sale write stating price. M. Dahlgren, 3907 Mead, Seattle, Wash.

AUBURN, CORD or Lincoln Continental and parts for same. Send complete description, model number, photo if possible, price B. Salvatore, 2414 Main St., Bridgeport, Conn.

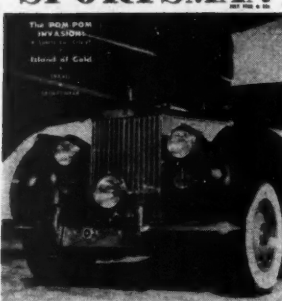
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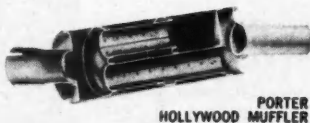


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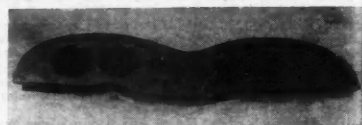
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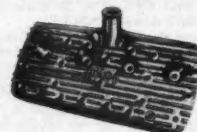


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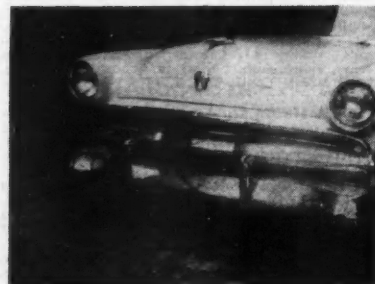
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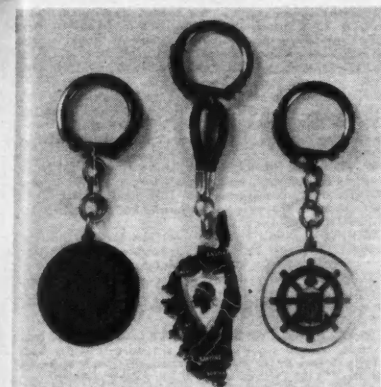
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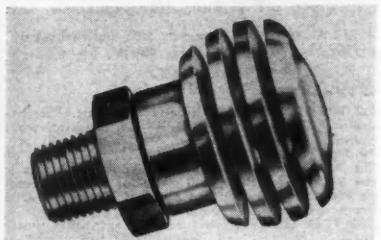
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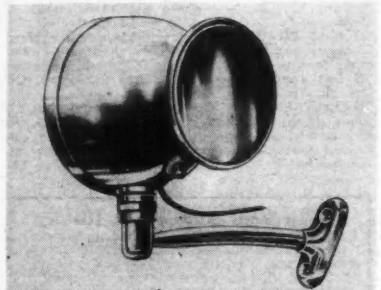


A LIMITED NUMBER of official programs of the International Motor Sports Show have been made available to motor enthusiasts who were unable to get a copy at the New York show. The 104-page program contains important editorial matter from recognized authorities on sports cars, plus many photographs never before seen. Price is \$1.00 each (including postage). Write: International Motor Sports Show (General Offices), 527 Fifth Ave., New York 17, N.Y.

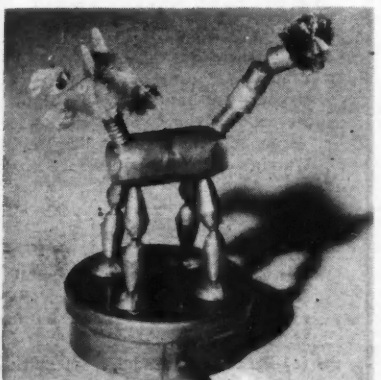


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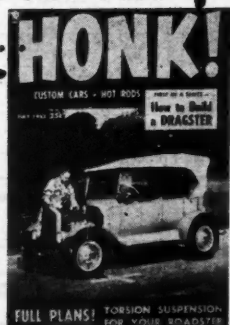
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PRE '20 STUTZ or steam car in restorable condition. W. Woodall, Box 255, Marcus, Iowa.

PRICES, PICTURES of old model cars in restorable or better condition, state price and send photo if available. B. Griswold, Box 638, Drain, Ore.

INNER UNIVERSAL JOINTS for Model 810 or 812 Cord, state price and condition. V. Lathrop, Dundee, Ill.

'31 CHRYSLER six roadster in restorable condition. R. Allen, 2643 E. 22nd St., Tulsa 5, Okla.

'41 CADILLAC convertible coupe, 62 model, must be in good condition, state price, send photo if possible, prefer Eastern location. M. Chakmakian, 127 S. 46th St., Philadelphia 39, Pa.

'32 FORD roadster, stock appearance, reasonable condition and reasonable distance for driveway, four or eight cyl. ok. J. Nehring, Floodwood, Minn.

FOUR HUBCAPS and an air compressor for a '31 Model 60 Oakland Greyhound, also instruction manual for same if possible. M. Liedkie, Milford, New York.

KING MIDGET, two-passenger style, would prefer late model with reverse and two-speed transmission, please quote price and condition, photo if possible. B. Hoefi, 4532 18th NE, Seattle 5, Wn.

'40 LA SALLE conv. sedan, northeast U.S., preferably in good condition. A. MacKintie, 106 Wellwood Dr., Fayetteville, N.Y.

'32 FORD Victoria, body and chassis must be in good shape, model B preferred, within 350 miles of Burlington, Vt., can truck body only. B. Russell, 20 Main St., Essex Junction, Vt.

'32-'36 FORD, three or five window coupe, must be good, stock condition, within 60 miles radius of Albany, N.Y. Enclose complete details, photos. R. Relyea, 13 Fernbank Ave., Delmar, N.Y.

'41 or '42 LINCOLN CONTINENTAL hardtop, cash, no wreck, engine or tires not important, send photo with price. C. Schroeder, Box 381, Antigo, Wisc.

SELL OR SWAP

'49-'52 VOLKSWAGEN, will pay cash or swap good '49 Morris Minor conv., please send info, within 300 miles, Dallas. J. Hacker, 3600 Colgate, Dallas 5, Texas.

PRE-WAR KRIEHOFF custom made, original, left-hand Mauser. New, 30/06 barrel, new French stock (not a conversion). Want 1750 cc DOHC Alfa Romeo engine. F. Jett, 833 N. Tacoma Ave., Indianapolis 1, Ind.

EITHER OF TWO '34 Pierce Arrows, one a Silver Arrow, want '32 Pierce or any make classic with town car type of body. M. Bustin, Box 112, Cohasset, Mass.

'37 JAGUAR engine disassembled, radiator and four-speed transmission, slight housing damage, some body parts. Want hop-up equipment for Mercury engine, also Mercury transmission. J. Kipnis, PO Box 2013, Tucson, Ariz.

'31 FORD two-door phaeton touring car, excellent condition, metallic blue, new top, four new tires, red leatherette upholstery, for MG, other sports car, make offer. D. Lodd, Norris, Tenn.

'39 LA SALLE V-8 opera club coupe, 29,000 miles, beautiful classic, showroom masterpiece, one in a million. Trade for Chrysler conv. sedan in like condition, or what have you? L. Clantz, Deerfield, Mich. Phone 111.

'31 BUICK conv. coupe, landau irons, sidemounts, rumbleseat, four nearly new six ply, 6.00x18 tires, write for photos and details. H. Stevens, Apt. 306, 2315 Dwight Way, Berkeley, Calif.

'21 FORD T hardtop coupe, engine excellent (overhauled), body A-1, tires good, upholstery fair, cash or trade on Lincoln Continental or other, reasonable. J. Marley, Bedford, Iowa. Phone 94J.

'32 FORD Z'd FRAME, suicide front end, overhauled V-8 60 engine, rebuilt transmission, practically ready for custom body. Best offer or what have you? P. Mowbray, 7 Brook Ave., Bay Shore, N.Y.

'48 LINCOLN CONTINENTAL coupe, excellent condition, 38,000 miles, dual carbs, 25 coats Hawaiian bronze and beige, new whitewalls, \$1000 or best trade, or \$2500. J. Guarino, 61 Roseville Ave., Newark, N.J.

'33 FRANKLIN sedan, air-cooled, fine shape all around, want something older. P. Meigs, 11 Hancock St., Winchester, Mass.

STUTZ 8 S.O.H.C. ENGINE, brand new, complete T roadster body, Frontenac head and other T speed equipment, new Kinmont disc brakes. J. Billman, 53 E. Mechanic St., Shelbyville, Ind.

'40 LINCOLN CONTINENTAL in rather poor condition, could be restored or good for parts, excellent interior, \$300 or trade for Dodge V-8 engine. E. Schall, 949 W. Adams Blvd., Los Angeles 7, Calif.

'34 PIERCE ARROW sedan; radio, heater, overdrive, excellent tires and upholstery, paint better than average. A. Walker, 4317 Excelsior Blvd., Minneapolis, Minn.

NEW J2X ALLARD-CHRYSLER engine, unmodified, five wire wheels, 490 miles, never licensed. A. Walker, 4317 Excelsior Blvd., Minneapolis, Minn.

'82 MARK VII JAGUAR, less body, 8000 miles, will sell or swap engine, etc., separately. L. Cracraft, 1165 National Rd., Wheeling, W. Va.

SERVICE MANUALS, spare parts, literature, factory parts books on model 810, 812 and L-29 Cords. Want pictures of Cords. L. Greenlee, Box 1036, Anderson, Ind.

TUCKER, collectors special, best offer over \$3300, one of few in existence, will be worth much in time, needs paint. J. Langmann, 300 West Ave., Ithaca, N.Y.

'26 CHEVROLET coupe, new cream and black paint, engine runs good, upholstery worn, \$125, or best offer, or trade for what have you? M. Jenkins, 131 E. Edgewater St., Portage, Wisc.

'36 FORD phaeton, sport body, body and running gear in exceptionally good shape, want later model closed coupe, pics on request. W. Southern, 17426 Spring St., Los Gatos, Calif.

'38 PACKARD, DARRIN body, good condition, what have you to swap? G. Sparks, 2268 Kethryn Ave., Pomona, Calif.

'37 LINCOLN LE BARON K sport coupe, V-12, excellent throughout, new rings, tires, battery, brakes, \$650 delivered anywhere in US, or swap for Packard or Rolls Royce. A. Cameron, 8604 Humble Rd., Houston 16, Texas.

ARDUN overhead valve conversion for 100 hp Ford block, develops 160 hp with standard block, what am I offered? D. Koivisto, Keewatin, Minn.

'22 BUICK four-cylinder opera sedan, mint condition, new tires, runs perfectly, want antique or classic. J. Smart, 8500 S. Aberdeen, Chicago, Ill. Ste 37281.

'36 PACKARD V-12 seven-passenger limousine, good shape, stored since '48, has six wire wheels, \$150. Drive it away or swap for anything of value. C. Burton, 112 Central Ave., Seal Beach, Calif.

'47 LINCOLN club coupe, black, whitewalls. Swap for '49 Olds or best offer. Will trade and return pics, all letters answered. B. Flint, 1201 Foster Ave., Cambridge, Ohio.

'34 REO sport coupe, completely rebuilt mechanically, chrome refinished except bumpers, six good tires, original paint good but some scratches, new top, parts cost \$310. W. Buxton, Box 276, Yamhill, Ore.

'51 MARK V JAGUAR, gray, will sell or swap for MG, engine just overhauled, immaculate inside and out, new tires, never in competition. J. Babcock, 564 E. Livingston St., Celina, Ohio.

MARK IV JAGUAR sports sedan, new paint, '53 engine components (XK120), chrome perfect, hottest, slickest sedan in US. P. Hatman, 1101 Crescent Ave., Independence, Mo.

'31 V-16 CADILLAC four-door sedan, excellent mechanical condition, good body, six tires, two almost new, 28,000 miles, \$350. Will swap for other classic near N.Y. R. MacDonald, 133-31 135 Place, South Ozone Park 20, N.Y.

ROADSTER body from Bantam, '39 Ford running gear disassembled, one 85 and two V-8 60 engines, want powered lawn mower or Crosley engines, or refrigerator, or? C. Klish, 7624 S. Laramie, Oak Lawn, Ill.

V1710 ALLISON, mag. starter, carb and fuel pumps, \$1200. W. Phelps, Box 454, Beaver, Okla.

SWAP

'52 MG TD, like new, dozens of extras. For late J-2 or K-2 Allard or '50-'51 XK-120 roadster, want nothing raced or wrecked. J. Thatcher, R. #3, Findlay, Ohio.

'14 DODGE touring, runs good, engine #29, this is the ninth Dodge built; will swap for Stanley Steamer, non-condensing, '15 or older. H. Anderson, 4703 Franklin St., Omaha, Nebr.

130 YEAR OLD key wind and set extra-thin watch by A. Vacheron Girard, beautiful 18K case, excellent timekeeper, what do you offer? Would like '39 Packard 12, '36 Duesenberg or other import. J. Sternberg, Fox Lake Rd #1, W. Leesport, Pa.

'32 FORD ROADSTER, channeled three V-8 engines, Edmunds heads and manifolds, hydraulics, etc., many extras, needs finishing touches. Trade for '49 Ford coupe or equivalent. S. Kent, RFD 1, Old Oak Rd., Bridgeport, Conn.

'32 PACKARD Eight Victoria, eight good tires, 10 tubes, in fine running condition, good paint, for any medium to large older car in extra fine condition. Dwayne Bennett, 1028 N. Walnut St., Monticello, Ill.

Test Your Automobile History

Answers to quiz on page 62

1. White
2. Auburn, Duesenberg, Hupmobile, Rambler
3. Oldsmobile, Reo
4. Studebaker
5. Franklin
6. Haynes - Apperson, Pope - Hartford, Stevens-Duryea, Stoddard-Dayton
7. Algonquin Hill Climb, Glidden Tour, Watkin's Glen Road Race
8. (3)
9. Cord
10. Simplex, in 1910
11. Winton
12. Pierce-Arrow, Franklin, Maxwell, Grant (starting at the top).
13. (2)
14. Moline-Knight
15. (1) Packard, (2) Cadillac, (3) Buick

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